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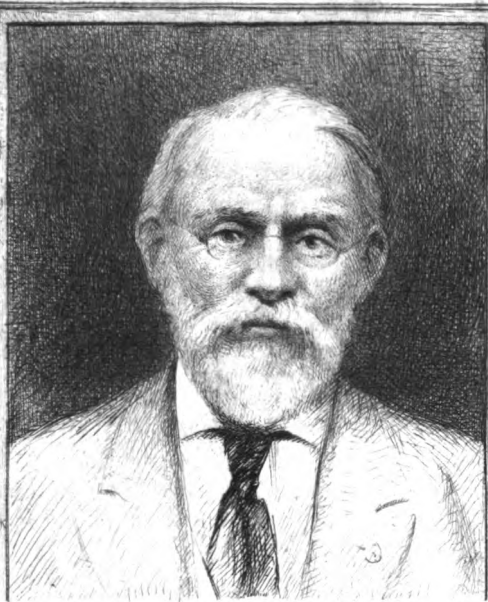
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Vol. XLIII, 1. January 1914

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# Journal

OF THE

## United Service Institution

of India.

Published under the Authority of the Council.



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### UNITED SERVICE INSTITUTION OF INDIA.

*Agents for Sale in the United Kingdom:*

MESSRS. HUGH REES, LTD., 5, Regent Street, W., London.

Published Quarterly.

Price Rs. 2.

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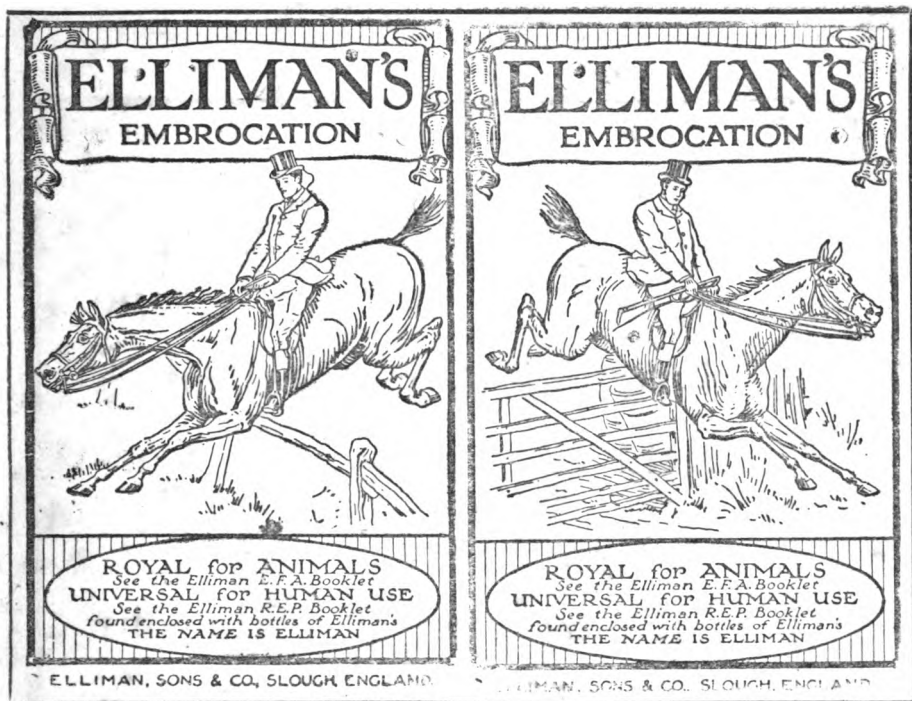
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- The United Service Institution of India is situated at Simla.
- Officers wishing to become members of the United Service Institution of India should apply to the Secretary. The rules of membership are printed on the inside back cover of this Journal.
- The reading-room of the Institution is provided with all the leading newspapers, magazines, and journals of military interest that are published.
- There is a well-stocked library in the Institution, from which members can obtain books on loan, free. Suggestions for new books are solicited, and will be submitted to the Committee. Books are sent out to members V. P. for the postage, or bearing by railway.
- The Institution publishes a Quarterly Journal in the months of January, April, July and October, which is issued postage free to members in India and to all life members; but ordinary members wishing to have their journals sent to any address out of India must pay in advance Re. 1 per annum to cover foreign postage charges.
- Members and the public are invited to contribute articles to the Journal of the Institution for which honoraria will be awarded by the Executive Committee. Rules for the guidance of contributors will be found on the inside back cover of this Journal.
- MEMBERS ARE RESPONSIBLE THAT THEY KEEP THE SECRETARY CAREFULLY POSTED WITH REGARD TO CHANGES OF ADDRESS.
- When on leave in England, members can, under the affiliation rules in force, attend the lectures and make use of the reading-room, etc., of the Royal United Service Institution, Whitehall, on payment of a subscription of 5 shillings per six months.



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# UNITED SERVICE INSTITUTION OF INDIA

JANUARY 1914.

## SECRETARY'S NOTES

### I.—New Members.

The following members joined the Institution between the 1st October 1913 and the 31st December 1913, inclusive:—

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2nd Lieut. I. Campbell.  
2nd Lieut. B. Onslow.  
Brig. General K. E. Lean.  
Captain. C. L. Norman.  
Major. E. E. Barwell.  
Captain. H. C. Pulley.  
Capt. J. F. Barrington.  
Br.-Genl. W. H. Dobbie.  
Commdr. A. S. T. Bowden.  
Major D'A. Legard.  
Major F. C. Turner.

Lieut. H. W. Goldfrap.  
Major General R. C. O. Stuart.  
Brig. General O. B. S. F. Shore.  
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Capt. E. S. Gillett.  
Colonel E. H. Hazelton.  
Lieut. J. C. Ward.  
Lieut. H. W. L. Waller.  
Capt. R. D. Jennings.  
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Capt. J. McL. G. Taylor.  
Major General C. A. Anderson.  
2nd Lieut. A. McD. Ritchie.  
Capt. M. C. Cunningham.  
Lieut. C. S. Andrewes.  
Major H. Smyth.  
Lieut. H. W. C. Brownlow.

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To assist officers working for Q. (i) tactical schemes are issued by the Council of the Institution to members only, at Rs. 5 per scheme, which include criticisms and solutions by a fully qualified officer selected by the Council. 23 schemes are now available.

A number will be allotted to each member applying for papers, and solutions, must be sent under these numbers to the Secretary, Simla.

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(i) In order to assist candidates for the Staff Colleges, and other officers, in the study of military history, the Institution has for issue, to members only, sets of questions on selected campaigns. The following papers are now available:—

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- (b) Two papers on Callwell's Small Wars.
- (c) Two papers on the strategy of the Russo-Japanese War.
- (d) Three papers on the battles of the Russo-Japanese War.
- (e) Two papers on the Afghan War, 1879-80
- (f) Two papers on the Crimean War.
- (g) One paper on the Indian Mutiny.
- (h) One paper on the Shenandoah Valley Campaign 1861-62.
- (i) One paper on the Bohemian Campaign, 1866, to the Battle of Koniggratz.
- (j) Other papers on the Campaign of 1806, the Shenandoah Valley Campaign, the Bohemian Campaign 1866, and the Franco-German War 1870-71 will shortly be ready,

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(ii) Pamphlets dealing with the Shenandoah Valley Campaign from April 1861 to June 1862, and the Bohemian Campaign, 1866, to the battle of Koniggratz inclusive. October 1913, can be obtained from the Secretary. Price one rupee each.

### IV.—Roll of Members.

Copies of the Roll of Members, corrected to 1st June 1913, are available. Price Rs. 2 per copy, per V. P. Post.

### V.—Premia for Articles in the Journal.

As it does not seem to be generally known that articles are paid for, as far as the resources of the institution will allow, members are informed that a sum not exceeding Rs. 400 is awarded for articles and reviews published in each Quarterly Journal.

### VI.—Library Catalogue.

The library catalogue revised up to 1st November 1912 is now ready. Members requiring copies should kindly inform the Secretary. Lists of books since received are published quarterly with the Journal.

Price of catalogue Re. 1, or Re. 1-4-0 by V. P. P.

### V.—Library.

Several instances have occurred lately of members who have asked for books from the library, having refused to accept them on delivery by V. P. P. Members are therefore informed that when books asked for are out at the time of receipt of the request, they are recalled under Library Rule No. 6 a fortnight after issue and sent to them.

If no instructions are received that they will not be wanted, unless received within a certain time, members will be held liable for the postage, whether they refuse them on delivery or not.

# RULES

## OF THE

# United Service Institution of India.

---

### ***I.—Designation.***

The Institution shall be named "THE UNITED SERVICE INSTITUTION OF INDIA."

### ***II.—Object.***

THE design of the Institution shall be the promotion of Naval and Military Art, Science, and Literature.

### ***III.—Proceedings.***

The proceedings of the Institution shall embrace—

1. The delivery of lectures at any station in India.
2. Debates on military subjects at any station in India.
3. The publication of a Journal, *quarterly*, containing:—
  - (i) Original papers on military or cognate subjects.
  - (ii) Papers sent for publication by Branches of Army Headquarters.
  - (iii) Prize Essays.
  - (iv) Reports of lectures.
  - (v) Summaries of debates.
  - (vi) Translations from foreign works of military interest, selected by the Council or sent in by members.
  - (vii) Summary of items of news of military interest.
  - (viii) Secretary's notes, reviews of books of professional interest and notices of new books.
  - (ix) Any other matter approved by the Executive Committee.

### ***IV.—Patrons.***

1. The following shall be invited to be Patron and Vice-Patrons *ex-officio*:—

PATRON.

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## VICE-PATRONS.

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Ditto ditto of Bombay

Ditto ditto of Bengal.

Ditto the Commander-in-Chief in India.

His Honor the Lieutenant-Governor of U.P. of Agra and Oudh.

Ditto ditto ditto of Punjab.

Ditto ditto ditto of Burma.

Ditto ditto ditto of Bihar and Orissa.

His Excellency the Naval Commander-in-Chief, East Indies.

Lieutenant-Generals Commanding, Northern and Southern Armies.

2. Besides the above, Vice-Patrons shall be limited to Members of the Royal Family, officers distinguished for their services, and members who have been benefactors to the Institution.

**V.—Government.***A.—Council and Meetings.*

1. The Government of the Institution shall be vested in a Council composed of twenty members, of whom the following ten shall be asked to become members *ex-officio*.

The Chief of the General Staff, India.

The Secretary to the Government of India, Army Department.

The Adjutant General, India.

The Quartermaster General, India.

The Director of Military Operations, India.

Two representatives of the Indian Civil Service, of whom one shall be from the Foreign Department, and one from another Department of the Government of India.

One representative of the Royal Navy or Royal Indian Marine.

The Director of Medical Services, India.

The Director General of the I. M. S.

The remaining officers, to make up a total of twenty, shall be elected annually on 1st May, or as soon after as possible, from amongst members of the Institution resident in Simla, not necessarily chosen on account of their official positions. Officers invited to become *ex-officio* members of the Council, and who are not already members of the Institution, shall be asked to join.

2. The election of the Council shall be carried out as follow:—

Early each year the Secretary will circulate to members resident in Simla, a voting paper containing a printed list of members of the Institution (not including officers holding appointments specified in para 1), who are permanent residents of Simla, and who are willing to take upon themselves the duties of a member of Council. The Secretary will previously have ascertained how many of the officers mentioned in para. 1 are willing to sit on the Council and will notify in the voting paper the number of ordinary members required to make up the full total of twenty. Each electing

member will record his vote by making a mark against the names of the candidates he selects to fill these vacancies, and will return the list to the Secretary.

3. The Chief of the General Staff shall be invited to become President of the Council.

4. The duties of the Council shall be to exercise a general control over the welfare and expenditure of the Institution.

5. A General Meeting of the Council shall take place in May or June for such business as may be brought before it, including the annual award of MacGregor Memorial Medals (*see end*). Another meeting, *when necessary*, shall be held on 1st September, or as soon after as convenient, to consider any questions connected with the Institution that require settlement prior to the close of the Simla season.

6. At the General Meeting of the Council in May or June, a statement of the accounts and progress of the Institution shall be laid before the Council by the Secretary. The accounts together with those of the MacGregor Memorial Fund, shall be audited annually by a competent auditor.

7. Three members of the Council shall form a quorum, and in the absence of the President, the senior member shall preside.

8. An Annual General Meeting of Members will be held within one month after the first meeting of the Council referred to in Rule 5. The President's annual report and balance sheet of the Institution for the previous year shall be laid before the meeting. Printed copies of the accounts for the year shall be sent to all members with the April Journal.

9. An Extraordinary General Meeting may be assembled at any time on the written requisition of 20 members.

10. Notice of all meetings, and the subjects to be discussed, shall be published in "The Pioneer" and "Civil and Military Gazette" 14 days previously.

11. An absent member who is eligible to vote at a General Meeting may do so by proxy, but no member eligible and present may hold more than two proxies. Every proxy must be signed by the absent member and stamped with a one-anna (or 1ā) stamp, on the form shown on page 6.

12. At a General Meeting any subject may be discussed provided that if any amendment to existing rules is involved, sufficient notice is given to permit of its being published in "The Pioneer" and "Civil and Military Gazette" 14 days previously.

13. No existing rule shall be modified or rescinded, and no new rule introduced, without a two-thirds majority of members present, or voting by proxy, being in favour of that course.

14. No member is eligible to vote, who has not paid his subscription for the year or who is 3 months in arrears to the Institution on any other account.

15. The President of the Council shall preside at General Meetings, or in his absence, the President of the Executive Committee.

16. Twenty members present and eligible to vote shall form a quorum.

*B.—Associate Members of Council.*

17. One officer from each of the nine Divisions and Burma shall be nominated annually by the General Officer Commanding concerned, to be an associate member of the Council of the Institution, to act from 1st July to 30th June. The duties of these officers shall be to further the interests of the Institution in their Divisions.

*C.—Executive Committee.*

18. An Executive Committee, consisting of a president and six members chosen from the Council, shall be elected annually at the first Meeting of the Council, and five other members selected by the Executive Committee, for the transaction of all the ordinary business of the Institution during the year. The Committee shall form the Reading Committee, to consider articles submitted for publication in the Journal.

19. The Executive Committee of the Council shall frame such bye-laws for the general conduct of the Institution as may appear to them necessary, subject to confirmation by the Council at the next General Meeting. All questions, which the Executive Committee are unable to dispose of, shall be referred by the Secretary to all the members of the Council who are in Simla.

*D.—Secretary.*

20. A Secretary shall be elected by the Council for the purpose of keeping, under the order of the Council, the accounts, editing the Journal and conducting correspondence. He shall receive a monthly allowance, and shall only hold the appointment for one year, unless the Council consider his re-appointment desirable.

*E.—General.*

21. Officers shall be invited to become corresponding members, to forward the objects of the Institution, and to communicate with the Council.

22. The financial year of the Institution shall begin on the 1st January.

NOTE—An annual donation of Rs. 3,000 is received from the Government of India in support of the Institution.

**VI.—Membership.**

1. All officers of the Royal Navy, Army, Colonial Forces, and of Volunteer Corps in India, and Gazetted Government officers, shall be entitled, to become members, without ballot, on payment of the entrance fee and annual subscription.

The Council shall have the power of admitting as honorary members, the members of the Diplomatic Corps, foreign naval and military officers, foreigners of distinction, other eminent individuals and benefactors to the Institution, not otherwise eligible to become members.

2. Life members of the Institution shall be admitted on the following terms:—

Rs. 50 *plus* entrance fee Rs. 5 (see para. 4) = Rs. 55.

3. Ordinary members of the institution shall be admitted on payment of an entrance fee (see para 4) of Rs. 5, on joining, and an annual subscription of Rs. 5, *to be paid in advance*. The period of subscription commences on 1st January.

4. Subscribing members of the Royal United Service Institution, Whitehall, London, are not liable for entrance fee while the affiliation rules are in force.

5. Life Members receive the Journal of the Institution post free anywhere, but ordinary members only in India. All members may obtain books from the library on paying the postage.

6. Honorary members shall be entitled to attend the lectures and debates, and to use the premises and library of the Institution without payment: but should they desire to be supplied with the Journal, an annual payment of Rs. 8, in advance, will be required.

7. Divisional, brigade, and officers' libraries, regimental messes, clubs and other subscribers for the Journal, save as noted in para 8, shall pay Rs. 8 per annum.

8. Serjeants' messes and regimental libraries, reading and recreation rooms, shall be permitted to obtain the Journal on payment of an annual subscription of Rs. 6.

9. If a member fails to pay his subscription for any financial year (ending 31st December) before the 1st June in the following year, a registered notice shall be sent to him by the Secretary inviting his attention to the fact. If the subscription is not paid by 1st January following, his name shall be struck off the roll of members.

10. Members joining the Institution on or after the 1st October will not be charged subscription on the following 1st January, unless the Journals for the current year have been supplied.

11. Members are responsible that they keep the Secretary carefully posted in regard to changes of rank and address. Duplicate copies of the Journal will not be supplied free to members when the original has been posted to a member's last known address, and not been returned by the post.

12. Members or subscribers to the Journal intimating a wish to have their Journals posted to any address out of India, shall pay in advance Rupee 1 per annum to cover foreign postage charges, but Life Members who have left India shall not be liable for foreign postage on Journals.

13. All communications shall be addressed to the Secretary, United Service Institution of India, Simla.

By order of the Council,

S. M. RICE, Major,  
Secretary, U. S. I. of India.

SIMLA,

1st January 1914.

}



## PROXY FORM.

I hereby appoint \_\_\_\_\_  
 to be my proxy and vote for me at the General Meeting of the  
 Members of the United Service Institution of India to be  
 held on \_\_\_\_\_

Date \_\_\_\_\_

Signature \_\_\_\_\_

1 anna stamp

*N. B.*—A Member eligible to vote, present at the meeting,  
 may hold two proxies. Each proxy must be signed by the  
 absent Member and properly stamped with a one-anna  
 stamp.

## AFFILIATION RULES OF THE ROYAL UNITED SERVICE INSTITUTION AND THE UNITED SERVICE INSTITUTION OF INDIA.

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1. Members of the United Service Institution of India proceeding to the United Kingdom on two or three months "privilege" leave or on six months leave, are permitted as "Temporary Members" to attend the lectures and to use the reading room, &c., of the Royal United Service Institution (but not receive the Journal), on payment of a subscription of five shillings.

2. Should those joining as above obtain an extension of leave, they can extend their "Temporary Membership" on the payment of an additional 5s. for any period not exceeding six months.

3. Members of the United Service Institution of India proceeding to the United Kingdom on "furlough" or leave exceeding six months are permitted to attend lectures and use the reading room, &c., of the Royal United Service Institution on payment of 10s. per annum. Should they wish also to receive its Journal (which can only be delivered by the Secretary on personal application, or to an authorised agent, without incurring postage charges), an additional annual payment of 10s. will be necessary.

4. In the event of temporary members, under paragraph 1, obtaining an extension of leave for six months, and wishing also to obtain the Journal, they can do so on payment of fifteen shillings in addition to the five shillings already paid.

5. All the above subscriptions to be paid in advance, and admission as a "Temporary Member" to take place on payment.

6. The above rules will apply to both life and ordinary members of the U. S. I. of India.

7. Members of the Royal United Service Institution are throughout their service in India entitled to be in all respects (including receipt of Journal without extra payment) members of the United Service Institution of India on payment of an annual subscription of Rs 5 (in advance).

8. Any member of either Institution is entitled to obtain the Journal of the other on payment (in advance) at member's price.

9. The Secretaries of both Institutions interchange lists of members, made up to date, periodically:

## BYE-LAWS.

### ***Contributions to the Journal.***

1. All papers must be written in a clear, legible hand, and only on one side of the paper. All proper names, countries, towns, rivers, etc., must, when in manuscript, be written in capital letters. All plans must have a scale on them.

2. Contributors are responsible, when they send articles containing any information which they have obtained by virtue of their official positions, that they have complied with the provisions of A. R. I., Vol. II., para 487.

3. Anonymous contributions under a *nom-de-guerre* will not be accepted or acknowledged; all contributions must be sent to the Secretary under the name of the writer, and the paper will, if accepted, be published under that name, unless a wish is expressed for it to be published under a *nom-de-guerre*. The Executive Committee will decide whether the wish can be complied with.

4. The Committee reserve to themselves the right of omitting any matter which they consider objectionable. Articles are only accepted on these conditions.

5. The Committee do not undertake to authorise the publication of such papers as are accepted, in the order in which they may have been received.

6. Contributors will be supplied with three copies of their papers *gratis*.

7. Manuscripts of original papers sent for publication in the Journal will not be returned to the contributor, unless he expresses a wish to have them back and pays the postage.

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### ***Lectures.***

1. The subject of all lectures must be submitted for the sanction of the Executive Committee before such can be held.

2. The senior member present, being an officer of the Navy or Army, shall officiate as chairman at meetings, when no other chairman has been specially invited.

3. Speakers should address their remarks to the chairman and not to the meeting.

4. No remarks of a political or personal nature, or in any way subversive of discipline or harmony, will be permitted.

5. Lecturers will be required to furnish the Secretary with a copy of their paper, or lecture, if required for publication in the Journal. Advance copies may not be given to the press without the approval of the Executive Committee.

6. Meetings shall be dissolved or adjourned on the decision of the chairman.

7. Admission to lectures will be by ticket only and be restricted to members and their friends.

8. Warrant officers, non-commissioned officers, and soldiers of the Army and Volunteer corps shall, when there is room, be permitted to attend lectures.

9. Reporters will, under ordinary circumstances, be entertained at the expense of the Institution.

10. The Secretary is authorised to issue tickets to members of the general public in special circumstances and to recognised members of the press on their written agreement to submit any report for the approval of the Executive Committee before publication.

### **Debates.**

1. Subjects for debates will be approved by the Executive Committee and will usually take the form of a definite statement, which will give those taking part in the debate an opportunity of expressing their agreement or otherwise with the principle involved.

2. Notice of debates with the subject chosen for discussion will be circulated to members resident in Simla 10 days before the date fixed for the debate.

3. A proposer and a leader of the opposition will be chosen by the Executive Committee to open each debate, and both will be allowed a period not exceeding 10 minutes to do so. They will furnish the chairman with a short précis of the remarks they intend to make prior to the opening of the debate. Other members wishing to speak will notify the fact to the chairman, prior to the opening of the debate, also whether they intend to speak for or against the motion, but they need not furnish any précis of remarks. Such speeches should ordinarily be limited to about 5 minutes; the reading of previously prepared papers is to be deprecated. The chairman will call on members to speak in what order he chooses. He may subsequently ask if any other member present has any remarks to make; such remarks to be confined to comments on points already raised. The proposer and leader of the opposition will then be allowed a short period to sum up and answer arguments raised against their opening addresses, and finally the chairman will, if he chooses, close the debate by summarizing the opinions given.

The motion will then be put to the vote.

4. Only Members and Honorary Members may take part in or be admitted to debates.

5. No report of the proceedings of debates will be published in the Journal, but when the debate proves of interest, a brief summary of the arguments advanced and the conclusions arrived at may, at the discretion of the Executive Committee, be published in the Journal. Such summaries will be compiled by the proposer and leader of the opposition to the motion.

6. All opinions and statements made in a debate must be regarded as the personal views of the individual making them in his capacity as a member of the United Service Institution and not in that of any official position he may happen to hold. The usual rules as to quoting secret and confidential matter will be observed.

7. The senior member present, being an officer of the Navy or Army, shall officiate as chairman at debates, when no other member has been specially invited to take the chair. The chairman will be responsible for the conduct of debates.

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(NOTE—These rules only apply to debates held in Simla, but may serve as a guide to those held elsewhere.)

## **Library.**

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1. The Library is only open to members and honorary members of the United Service Institution of India, and members are requested to look upon books as not transferable to their friends.

2. No book shall be taken from the library without being registered by the librarian in the issue book.

3. Books will be issued between the hours of 9-30 A. M. and 5 P. M. during the summer, 10 A. M. and 4-30 P. M. during the winter, and to 2-30 P. M. on Saturdays. The library will be open daily from 9-30 A. M. to sunset, including Sundays, but no books will be issued on Sundays.

4. A member shall not be allowed at one time, more than three books, or sets of books.

5. No papers, magazines, works catalogued under the heading "Works of Reference" or books noted as Confidential, may be removed from the Institution.

6. No particular limit is set to the number of days for which a member *in Simla* may keep a book, the Council being desirous of making the library as useful as possible to members, but if, after the expiration of a fortnight from the issue of a book to any member, it is required by any other member, it will be recalled.

7. Applications for books from members *at outstations* should be made to the Secretary and accompanied by the requisite amount for postage, otherwise they will be sent V. P. P. They must be returned *post paid* within one month of date of issue or application made for permission to retain them for further periods of one month at a time, up to a limit of four months. This permission will always be granted, unless the book is required by another member.

8. If a book is not returned at the end of four months it must be paid for, without the option of return, if so required by the Executive Committee.

9. Lost and defaced books shall be replaced at the cost of the member to whom they were issued. A book shall be held to be lost when a member omits to return it on receipt of a registered cover from the Secretary; and on the expiry of one month (in the case of members residing in England, two months) from the despatch of such a cover, if reasonable explanation be not forthcoming, a new copy shall be bought and charged in the member's account. In the case of lost books that are out of print, the value shall be fixed by the Executive Committee and the amount, when received, spent in the purchase of a new book,

10. Members are invited to note any books which they think might with advantage be procured for the Institution. A list of the books thus suggested will be submitted periodically to the Executive Committee, and such action taken as may be deemed advisable.

11. Members are invited to contribute presents of books, maps, and photographs of naval or military interest. These may be sent "bearing" to the Secretary, who will note them as "presented" and duly acknowledge their receipt.

12. The issue of a book under these rules to any member implies the latter's compliance with the rules and the willingness to have them, if necessary, enforced against him.

13. The catalogue of the library may be purchased for Re. 1.

By order of the Council,

SIMLA ;        }  
1st January 1914. }

S. M. RICE, Major,  
Secretary, U. S. I. of India.

## MacGREGOR MEMORIAL MEDALS.

1. The MacGregor Memorial Medal was founded in 1888 as a memorial to the late Major-General Sir Charles MacGregor. The medals are awarded for the best military reconnaissances or journeys of exploration of the year.

2. The following awards are made annually in the month of May:

(a) For officers—British or Indian—a silver medal.

(b) For soldiers—British or Indian—a silver medal, with Rs. 100 gratuity.

3. For specially valuable work a gold medal may be awarded in place of one of the silver medals, or in addition to the silver medals, whenever the administrators of the fund deem it desirable. Also the Council may award a special additional silver medal, without gratuity, to a soldier, for special good work.

4. The award of medals is made by His Excellency the Commander-in-Chief as Vice-Patron and the Council of the United Service Institution, who were appointed administrators of the Fund by the MacGregor Memorial Committee.

5. Only officers and soldiers belonging to the Army in India (including those in civil employ) are eligible for the award of the medal.\*

6. The medal may be worn in uniform by Indian soldiers on ceremonial parades, suspended round the neck by the ribbon issued with the medal.

### Note.

(i) Personal risk to life during the reconnaissance or exploration is not a necessary qualification for the award of the medal; but in the event of two journeys being of equal value, the man who has run the greater risk will be considered to have the greater claim to the reward.

(ii) When the work of the year has either not been of sufficient value or has been received too late for consideration before the Council meeting, the medals may be awarded for any reconnaissance during previous years considered by His Excellency the Commander-in-Chief to deserve it.

By order of the Council,

SIMLA ;

S. M. RICE, Major,

1st January 1914.

Secretary, U. S. I. of India.

\* *N. B.*—The terms "officer" and "soldier" include those serving in the British and Indian armies and their reserves; also those serving in Auxiliary Forces, such as the Volunteers and Corps under Local Governments, such as Frontier Militia, Levies and Military Police, also all ranks serving in the Imperial Service Troops.

# VIII.—Books and Maps presented to Library.

The acknowledgement of the Council for the following presentations are hereby recorded:—

## *Presented by H. Hensman, Esq.*

- Campaign on the North-West Frontier by Captain H. L. Nevill.
- Life of Field Marshal Sir William Gomm by Francis Cutting Carr-Gomm.
- Gun Running and the North-West Frontier by the Hon. Arnold Keppel.
- The Heart of Asia by F. H. Skine, and E. I. Ross.
- The Forward Policy and its Results by Richard Isaac Bence.
- Lockhart's advance through Tirah by Captain L. J. Shadwell.
- Innermost Asia by Ralph P. Cobbold.
- Ten thousand miles in Persia by Major Percy Molesworth Sykes.
- My Experience of the Boer War. by Count Sternburg.
- The Cabinet and War by Major Evans Gordon.
- With Mounted Infantry in Tibet by Maj. W. J. Ottley.
- Through Shen-Kan by K. S. Clark and A. de C. Sowerby.

## *Presented by Captain B. J. Haslam, R. E.*

Kriegsgeschichtlicher Atlas zum Studium der Feldzüge der Neuesten Zeit,  
By von Fritz Schirmer.

## *Presented by Colonel L. G. Watkins, R. A.*

Burmese map found in the Palace at Mandalay in 1885.

# IX.—Gold Medal Prize Essays.

The Council have chosen as the subject for the Gold Medal Essay for 1913-14 the following:—

*"The tactics of street fighting as applied to Eastern Countries."*

The following are the conditions of the competition:

- (1) The competition is open to all gazetted officers of the Civil Administration, the Navy, Army, or Volunteers.
- (2) Essays must be printed or type-written and submitted in duplicate.
- (3) When a reference is made to any work, the title of such work is to be quoted.
- (4) Essays are to be *strictly anonymous*. Each must have a motto, and enclosed with the essay there should be sent a *sealed* envelope with the motto written on the outside and the name of the competitor inside.
- (5) Essays will not be accepted unless received by Secretary on or before the 30th June 1914.
- (6) Essays will be submitted for adjudication to Referees chosen by the Council. No medal will be awarded if the Council consider that the best essay is not of a sufficient standard of excellence.
- (7) The name of the successful candidate will be announced at a Council Meeting to be held in August or September 1914.
- (8) All essays submitted are to become the property of the United Service Institution of India *absolutely*, and authors will not be at liberty to make any use whatsoever of their essays without the sanction of the Council.
- (9) Essays must not exceed 15 pages of the size and style of the Journal, exclusive of any appendices, tables, or maps.



**X.—Northern and Southern Army Prize Essays.**

The Council awarded the sum of Rs. 150 each on the usual conditions, for the best essays sent in from members of the Northern and Southern Armies by the 31st December 1913, on subjects selected by their respective Commanders.

The following subjects were selected :—

*Northern Army.*—"The best means of securing at peace manœuvres and in war, co-operation between British and Indian troops."

*Southern Army.*—"The consideration of the maintenance in the field of an army of 2 divisions operating in Afghanistan on the Southern Line of advance, against an enemy whose forces are organized on European lines."

**XI.—Regulations of the U. S. I. of I.**

As several amendments have lately been made to the Rules and Bylaws of the Institution, they have been reprinted and copies are circulated with this Journal.

**XII.—Quarterly Summary.**

A new feature was introduced in the October Journal, namely a summary of news of military interest. It is intended chiefly for those out of India or otherwise out of touch with the Army. It is at present only a beginning, but it is hoped that it will in due course form a valuable addition to the Journal when the idea has assumed a definite form.

**XIII.—Army Lists.**

The Institution is prepared to supply to members and units typed extracts or printed facsimile pages from old Army Lists, from the date of their being raised, for all units of the Indian Army at the following rates.—

Typed copy of each original page in Army List	... Re 1
Printed facsimile copy of each original page in Army List	... Rs. 2
Binding, if required	... extra.

**XIV.—Madras Army, drawings of old regimental uniforms, badges, colours.**

The Institution has official designs for the dress of Cavalry, Artillery and Infantry Units of the old Madras Army for the period about 1840-50; also the sanctioned designs for the buttons, and badges of each regiment and numerous sketches of the same and of regimental colours sent up for sanction, are available.

Any regiment which wishes to have their own designs may receive them on application. But as there is only one copy of the authorised dress of each arm at that period these can be reproduced, if several regiments wish to have them and agree to bear a share of the cost.

# The Journal

OF THE

## United Service Institution of India.

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Vol. XLIII.

January 1914.

No. 194.

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### ***Gold Medal Prize Essay, 1912-13.***

BY MAJOR A. G. THOMSON. *58th Vaughan's Rifles (F. F.)*

SUBJECT.—“Examine the application of the main principles laid down in Field Service Regulations I. Chapter VII, (The Battle) to the conditions of a campaign in a terrain similar to that of Baluchistan and Afghanistan, against an Army organised on modern principles.”

MOTTO.—*Deus Providebit.*

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In the following pages the reader is presumed to have gathered the main principles set out in Chapter VII, from the text-book itself. But before considering their application in a terrain similar to that of Baluchistan and Afghanistan, an outline of the chief physical characteristics of these countries may not be out of place.

Where illustrations are required they are taken from Afghan history ; not because that history contains the only examples of war in a similar country—campaigns in Abyssinia, Persia, Central Asia, might be quoted with equal relevance—but because the reader may wish for further detail regarding specific cases, and books of reference relating to Afghanistan will be readily available to him. It is true that unorganised tribal gatherings furnished the more serious opposition to our forces in Afghanistan, but this fact does not prevent fair deductions being made for use against an organised enemy.

**Description of the Terrain.\***

The terrain of Baluchistan and Afghanistan comprises four types—Desert, Mountain, Upland Valleys, Plateaux.

The deserts of Baluchistan and Southern and Western Afghanistan are either sandy valleys broken by barren rugged mountains, or broad wastes of rolling sand-hills. Their chief characteristics are intense heat, scarcity of water, absence of supplies, and few roads, which are heavy and sandy. The direction of the roads and the distance between the stages are determined by the presence of water. At many of the stages the latter is sufficient only for a small caravan; moreover, it is often brackish and mixed with deleterious salts. Neither fodder, except possibly for camels, nor firewood can be counted on. A military force would have to carry water and supplies, enough to last for ten days or a fortnight, according to the width of desert to be crossed; consequently only small and specially equipped parties could attempt the crossing.

Tracts of mountainous country cover the greater part of the region under consideration. Steep high ridges, broken at frequent intervals by higher peaks, separate narrow winding valleys and gorges. The main ridges throw out spurs at all conceivable angles, forming a tangled maze of hills, which command nearly every corner of the lower ground between them, and furnish a succession of positions whence an advance can be resisted. The hills may be barren, as they generally are in the Southern portions of the tract, or densely wooded, as in the Northern. The ravines are often dotted with patches of cultivation, where the lie of the ground admits of water being brought on to it, and of terraces being formed to retain the moisture. The gorges are sometimes so narrow that a laden mule can scarcely pass through them. The mountain ranges are crossed by passes, which may be

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\* Military Report on Afghanistan.

Field Notes on Afghanistan.

and Afghan War, Official Account.

History of the 2nd Afghan War, Colonel H. B. Hanna.

deep gorges worn by the action of water, or mere depressions in the contour of the range with steep gradients leading up to them. Most of the passes form strong defensive positions. The height of the mountain ranges varies roughly from 5,000 feet above sea level in the South and West to 25,000 feet in the North-East. Consequently, in the higher tracts many of the passes are closed by snow in the winter months from November to March.

The high mountains of the Hindu Khush Range traverse Afghanistan from the North-East, forming a barrier North of Kabul, which is crossed by three important passes and by many smaller ones. Gradually becoming lower, the range takes a more westerly direction, where it is known as the Koh-i-Baba, and after dividing into three main branches it sinks into the Herat plain. A triangular mountain tract, impassable by any but small lightly equipped columns, stretches southwards from the Koh-i-Baba in the district known as Hazarajat. From the Hindu Khush a strip of mountainous country stretches south along the eastern frontier to Quetta. The effect is that all approaches to the centre of Government are barred by difficult passes, and the advance of any but small forces is restricted to certain definite lines.

Here and there the mountains recede and leave room for relatively broad and fertile valleys, such as the Upland Valleys. Logar Valley and Maidan, both near Kabul. These valleys are extensively cultivated by means of irrigation. The irrigation channels are numerous, many of them deep and broad and lined by trees, and they restrict the free movement of all arms, especially of artillery and wheeled transport. Where the fields are cut into terraces, they have the same effect but in a lesser degree. Towards the south and west of the area, water is brought by *karez*s—underground tunnels with construction shafts sunk at short intervals along their course. As the level of the ground falls, these tunnels become open ditches which get gradually shallower until at length the water flows out on the surface. The water may be turned on to the fields at will, thus rendering them boggy and impassable. Where these obstacles do not interfere, however, the valleys are suitable to the action of all arms. There are many

villages, and orchards, all of which afford good cover. The usual type of village is a mud-walled enclosure flanked by one or two towers. Many of them form strong positions against rifle fire, but the dwelling houses are usually too dirty to give agreeable billeting accommodation unless they are first thoroughly cleaned.

The valleys are sometimes broken by hills, which may rise 1,000 feet above the general level. These are like the mountains already described, and are generally surrounded by a tumbled mass of foot-hills.

North of the great southern desert, which is called the **Plateaux.** **Registan**, a stony plain, broken by many undulations and low hills, rises gradually towards the mountains of the districts of Hazarajat and Zemin-dawar. Though the plain is cut up by many rivers and *nalas*, the greater part of it is waterless and barren. There is cultivation near the rivers, and water may also be found in *karezes*, and a few scattered oases, and in the *nalas* after rain.

In some parts of the country, for example the plain of Ningrahar and the country between Kandahar and Ghazni, and characteristics of the stony plateaux and fertile valleys are found side by side,

The larger rivers are subject to annual floods. The water rises with the melting of the snow in the mountains in March, reaches its greatest depth in April and May, and returns to its usual level in June or July. In their upper courses the rivers are mountain torrents, which rush down winding ravines. After leaving the hills they flow between high steep banks in broad channels, which are only entirely covered with water in flood time. In flood they are unfordable; at other times they may be forded at many points, but previous reconnaissance is always advisable in case of quicksands.

Since the climate of Baluchistan and Afghanistan is influenced more by physical features than by latitude, its variations must be noticed in this essay in so far as they might affect tactical operations. The range of temperature in the twenty-four hours may extend to 80

degrees Fahrenheit. Among the mountains the valleys are always much hotter than the hill-tops ; and, besides, men get warm and are apt to catch chills after the exertion of climbing. In winter biting cold winds at any elevation, and snow at heights of over 5,000 feet may stop or hinder manoeuvres. Dust storms and hot winds may do the same in summer. In the plains at all seasons men and animals are apt to raise clouds of dust, which cause fatigue and advertise movement to a distance.

The rivers are not navigable, with the exception of portions of the two widely separated Kabul and Hel-mund streams. Navigable rivers cannot, therefore, be considered typical of the terrain.

A few roads fit for wheeled traffic, or capable of being quickly rendered fit for wheels, lead into the country over the easier passes, and cross the less rugged and less desert portions of the interior. Among the mountains the roads are either *nala-beds*, or narrow paths winding along the hill-sides. The *nala-beds* are too rough for anything but pack transport and are liable to be blocked at the gorges by freshets, which come down after rain and may last for a few hours or days. The hill-paths are generally too narrow to admit of broader formations than file for men and single file for animals. The gradients are often very steep ; 1 in 10 is common, 1 in 4 or 5 may be met with. In the broader valleys and on the plains troops can march off the roads. In the cultivated parts there are cross tracks and paths from village to village. River bridges are few, but where the country is wooded material for bridging can be found, and in the more populated districts bridges could be made out of the woodwork of the houses. Elsewhere, material is scanty.

There are no telegraph and railway systems, and the telephone lines are so few that they need not be considered.

It may be said that the main features of a terrain similar to that of Baluchistan and Afghanistan are :—  
**Summary.**

(1) Desert, impassable to all but the smallest parties of specially equipped troops.

(2) Mountainous tracts where movement is difficult and direction is easily lost.

(3) Fertile valleys, where in spite of water channels and irrigated fields, it is easier to manoeuvre than in the mountains or the desert.

(4) Undulating plateaux, where troops can move across country more easily than elsewhere, but where water is scarce.

(5) A great number of strong defensive positions.

(6) Few lines of advance fit for the movements of large forces, and few roads suitable for wheeled transport and guns.

(7) Absence of lateral communications.

(8) Scarcity of supplies and billeting shelter in the greater part of the area, and difficulty of sending supplies far from the main lines of communication.

#### F. S. R. PART I.

#### Chapter IV (the Battle).

An air service will be useful in most parts of the terrain, though flying, except at a considerable height, after the sun is well up will be troublesome in the hot weather, owing to the altitude at which *remous* may be found at the season. Among the mountains it will be difficult to find level spaces for starting and alighting.

Except in hilly areas the task of driving in the enemy's advanced parties may be given to mounted troops and horse artillery; but mounted troops should generally be supported by infantry on the principle of the mixed detachments used by the Japanese in Manchuria, because they will often come unexpectedly upon ground which is unsuited to horses. This happened with serious results, to quote one example, in the fighting round Kabul before Roberts' force was invested. Preliminary checks and repulses, which make it difficult for a commander to take the initiative, may thus be avoided.

In the hilly areas infantry and mountain guns must often do the work. Reconnaissance is exceptionally difficult in such ground, and a large number of infantry men should be trained for the work in peace time.

The signal service will be used to distribute information, and it may be noted that the weather is generally suitable for signalling by heliograph. Supplementary arrangements will be

required in enclosed parts of the country, especially among the hills where units will be split into detached bodies and the terrain though favourable to long distance visual signalling, may obstruct signalling through short distances. Messages will often be sent by hand in such country. Mounted men should be employed whenever the ground allows but dismounted messengers must often be used. Men who are skillful at finding their way in intricate country should be chosen for this task.

Where the Army can advance in two or more columns—as for instance between the Khyber and Kabul, and between Chaman and Girishk—it may be impossible for the advanced guards of the columns, or for parts of the general advanced guard, if one has been detailed, to co-operate. This happened in the advance on Kandahar during the second Afghan war, when the country prevented combined action by the two advanced guards though they were nominally under one man.† Again, hills which would prevent combined action separate the roads by which Kabul is approached from the North-East, or South. In these circumstances each column should have its own advanced guard, and the advanced guard commanders must be told all about the strategical and tactical situation to ensure co-operation between them.

An enemy may easily be lost sight of in broken or hilly country, *vide* the manoeuvres which preceded the Battle of Maiwand.\* Reconnoitring bodies will have to be specially careful not to lose touch with the enemy after he has been found.

Owing to the restricted view, a forward position is essential for commanders of columns during an advance among the hills. Where the hills are barren commanders of small forces may be able to occupy commanding points during an action, but where the hills are wooded it will be difficult for them to get a good view. In such circumstances a commander should trust rather to report by signal and orderly than to personal observation. The warning against giving undue weight to incidents which one is able to see applies also to the commanders of quite weak bodies in enclosed hilly country.

† History of the 2nd Afghan War, Hanna : Vol. II, p. 232.

\* History of the 2nd Afghan War, Hanna : Vol. III, p. 404.



**The Attack.**

Some of the open tracts of country are broken by undulations and by deep water-courses, which are dry except after rain. More than one road may sometimes be used, and troops can also march alongside the roads. Columns may, therefore, be shallow, covered positions for assembly can be found, and covered ways to the positions assigned to units will often be available.

Where the enemy's position overlooks a plain, it is more difficult to hide the deployment. Villages, orchards, trees and excavated earth on the edges of irrigation channels and *karezes* may give cover, if the area happens, to be a cultivated one. Water-courses, occasional oases, and deep folds of ground may help in less fertile areas. The enemy will probably know the range of all well-marked features, and if the development is to be covered by such features, it is important that the troops, should be hidden while moving to them. The troops, should, if possible, be deployed out of range; but even then, the operation should be hidden lest the enemy discover the commander's intentions. It will, accordingly, often be necessary to deploy before daylight or under cover of the mists which usually hang over the cultivated valleys in the early morning.

In the hills troops may be hidden, while deploying behind spurs and ridges, but since the lie of the ground will show the plan of attack to any observer, hostile scouts must be kept from occupying overlooking heights. There will seldom be room for formations of assembly, and as the narrow roads will necessitate long columns, the deployment will be slow, and it will be difficult to avoid bringing the men into action piecemeal. Arrangements must therefore be made to ensure that subordinate commanders know when the preparatory stage is completed, and commanders of the leading units should be specially careful not to commit their men, to action prematurely. †

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† 103 (103) : 104 (5)

The features of the terrain which bear on the question whether tactical success may be expected by directing separated forces to converge on the battlefield are: (1) that the lines of advance are far apart, (2) that lateral communications between them are very bad, and (3) that the only points of convergence are obvious to the enemy and distant from the frontiers. While a strategical advance on more than one line is not forbidden by these considerations, tactical success should rather be sought by the use of a general reserve.

In many parts of the country cover will be found to hide the movements of a general reserve, while the formation of the ground will compel the armies to fight on a narrow front. In such circumstances it may be possible to manœuvre the reserve after the development of the action has shown where the decisive attack can be made. But in mountainous country it should be remembered that the reserve cannot move quickly, and even when the battlefield is small it may be necessary to decide on the objective for the decisive attack soon after the action has commenced.

Most hill positions include features from which the rest of the line can be made untenable; but a commander should find out that features which apparently offer this advantage actually do so, before deciding to send the general reserve to capture them, because a great part of the position may be defiladed from them by other rising ground. The danger of a piercing attack being enveloped may be lessened by directing it along parallel spurs and by echelonning picquets on the ridges to its flanks.

In the hills good cover for a flank attack usually exists. In the broader valleys the general reserve may be able to surprise the enemy's flank by moving through the hills on the edge of the valley. In both cases, however, a flank attack may easily become isolated, and special thought should be given to keeping touch with the rest of the force.

In enclosed country it is specially difficult to discover the best ground for the decisive attack. On the wooded slopes of the Paiwar Kotal the frontal attack penetrated the position, while the flank attack, was unexpectedly stopped by a deep gully.\* Hence, while the force with which it is intended to decide the battle must be as strong as possible, the remainder of the line must not be so weak as to be unable to do so if the opportunity arises. Moreover, owing to the natural strength of the defensive positions, the defenders can only be kept fixed in their trenches by the most energetic action. For these reasons the numbers required to prevent the opposing commander reinforcing the point threatened by the decisive attack may well be double those of the estimated strength of the enemy in the trenches.

## Issue of orders

~~2~~ 104 (2) and (3).

Ample time should be allowed, but to allow far too much time is nearly as dangerous as to allow too little.

† All Masjid, 2nd Afghan War Official Account pp. 21-24  
Paiwar Kotai, " " " " 101-115.  
Manjhar Dfeile, History of 2nd Afghan War Vol. II, p. 106.  
Charassia, 2nd Afghan War, Official Account p. 228.  
Ahmad Khel History of 2nd Afghan War Vol. III, p. 344.

Reconnaissance beforehand is the only way of arriving at a proper estimate. A night march may be necessary to give troops time to reach their destination, but progress over bad roads and rough ground is of course still slower during darkness.

Except among the mountains, mounted troops will find that

Action of the	they can work in most parts of the country,
Cavalry.	though much of the ground is very rough.

§§ 104 (4): 106 2) Many of the hills are too steep for cavalry and the more level parts are often broken up by *nalas* and *karezes* in such a manner that men may come unexpectedly on bits of unrideable country as at Ahmed Khel, when our cavalry were stopped by undetected broken ground on the right of our line†. Again, before Sherpur was invested, our cavalry suddenly became entangled in a network of water channels and boggy ground. § Further south, between Quetta and Kandahar, parts of the Takhtapul Valley were found to be quite unsuited to cavalry manoeuvres. || Squadron leaders should remember that in such circumstances much depends on the work of the ground scouts.

On the other hand, the ground is not always so unsuited to the action of cavalry as it may appear. At the battle of Ahmed Khel, for instance, the Afghan horsemen were able to advance to the attack over rough hills on our left¶. While the usual rapid reconnaissance is necessary, to prevent the cavalry being sent to manoeuvre over impassable ground, it must not be taken for granted that ground, which appears from a distance too difficult is so in reality.

Though much of the terrain does not lend itself to the manoeuvres of a strong cavalry force, it may be possible to get the full advantage of large numbers by dividing them and placing them in several separate positions of readiness. Among the mountains there will be no opportunity of large masses of cavalry to co-operate in the battle, but suitable ground will often be found for small numbers.

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†History of Afghan War Vol. III. p. 343.

§2nd Afghan War, Official Account, p. 255.

	"	"	"	"	"	pp. 162—3.
¶	"	"	"	"	"	p. 355.

The more open parts of the country favour a converging  
 Action of Artillery artillery fire against a hostile position,  
 especially if heavy guns are available, but  
 §§ 104 (4): 105 (1) to mirage at distant ranges will often neces-  
 (4): 106 (3) and (4). sitate a far advanced observation station.\* A force working  
 among the mountains should have a large proportion of moun-  
 tain artillery, because there both roads and country are unsuited  
 to heavy guns, and even field guns may find it difficult to move.

Howitzers should be used to search out the enemy's sup-  
 ports and reserves on steep reserve slopes.

Artillery fire may be continued against trenches which are  
 placed high up on steep slopes until the assaulting infantry are  
 about to enter them, as the assaulting line will be below the  
 trajectory of the guns till the last moment.

Artillery may often be pushed well forward with the attack.  
 At Maiwand the enemy brought two guns along a *nala* unob-  
 served up to 400 yards from our line, and after they had opened  
 fire the gun detachments were still well protected.† It is,  
 however, easy to set an ambush for artillery in broken and hilly  
 country; therefore it will generally be necessary to detail an  
 escort for guns, even when they are sent to apparently unexposed  
 positions. At Ahmed Khel two of our guns came so suddenly  
 upon the enemy that they were obliged to open fire with case  
 at a range of a hundred yards, and to retire hurriedly for protec-  
 tion to the nearest infantry.‡

Ridges with intervening valleys, high ground to a flank, or  
 undulating ground in front of the position  
 Mutual support in the Infantry attack. will allow rifle fire to be directed over the  
 heads of the firing line. Parallel ridges  
 § 105 (4) and spurs which run towards the hostile  
 position will enable different part of the firing line to support  
 one another's advance. Fire may often be directed with good  
 effect against garden enclosures, village walls and the banks of

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\*Before Maiwand columns of men crossing in front of our reconnoitring patrols  
 were thought to be rows of bushes through the mirage. (History of 2nd Afghan  
 War: Vo., III. p, 899)

† History of 2nd Afghan War, Vol, III. p. 411.

‡ Personal Narrative.

canals or *karezes* in front of other portions of the line. In intricate country a subordinate leader must look constantly to the situation of units to his right and left in order to keep touch and lose no chance of giving support by fire.

As in the case of artillery fire, a covering rifle fire may be kept up against high sited trenches till the last moment.

It will not be unusual to find that ground to a flank must

**Preliminary** first be captured in order to protect or support the main attack, or the enemy's position may be guarded by foot-hills from  
**Capture of Minor Tactical Points.**

§ 105 (5) which his troops must first be driven.\* At the battle of Charasia an Afghan post on a hill outside the entrance of the Sang-i-Nawishta defile kept the British batteries out of range of the main position until the post was seized. † Roberts used the villages West of the Asmai Heights as an advanced position in his attempt to stem the advance of Muhammad Jan's army on Sherpur. ‡

But the most difficult situation occurs when the enemy holds successive ridges, each of which appears to be the main position until it is captured. Troops are apt to be discouraged by finding that the task which they thought nearly finished is scarcely begun. Commanders should, therefore, always be prepared for this emergency, and be ready to take the measures laid down in the text book without delay. At Charasia the right of the Afghan position was not discovered until a ridge, which was thought to be the main position, had been captured after which entirely new dispositions had to be made.§

In hilly or enclosed country a small part of the line will gener-

**The Assault.** ally begin the assault, and neighbouring units may not know what has occurred unless special attention has been paid to keeping touch. It is most important that an assault by a small part of the line should not be left isolated,

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\* Eastern face of Asmai heights, 2nd Afghan War, Official Account p. 267.

† 2nd Afghan War, Official Account pp. 216—222,

‡ " " " " 255—256.

§ " " " " 216—222.

If the assault is to be made up a steep slope, the final rush should not be too long, because if the men are blown and exhausted when they reach the trenches, they are sure to be driven back. How long the last rush should be depends upon the steepness of the slope and the physical fitness of the men, but the point from which it is made should be reached at a steady pace under cover of the fire of guns and rifles. In the case of high sited trenches, covering fire may make it impossible for the enemy to fire downwards at the assaulting troops.

The position may often be strengthened against recapture more quickly by building stone walls (sangars) than by digging trenches. Mountain guns may be the best kind of artillery to send forward into the position to resist a counter-attack and to pursue the enemy with fire. Among the hills, though pursuit on horseback may be impossible, mounted men can sometimes move quickly forward to commanding points, from which they can fire on the retreating enemy.

#### The Defence.

The country offers an unusual number of strong positions, Choice and Preparation of a defensive position. and the lines of advance are narrow and well defined. Supposing that the situation compels a commander to stand on the defensive, he will be able to find suitable ground without moving far: and since the direction of the enemy's advance can generally be foretold, there will often be time to prepare the position thoroughly.

But these facts should not be allowed to overshadow the disadvantages which attend a defensive attitude.

The defensive positions available may be roughly classified as:—

- (1) Those among intricate hills.
- (2) High ground overlooking relatively low and level country.
- (3) Positions of no great command.

In the first type the field of fire will be shortened by ridges in front, which, however, may be used as screening positions. The main position should be placed on ground which commands the

nearest ridges. From positions of the second type the attackers movements can be overlooked, the fire of artillery and infantry can be effectively combined, and the various parts of the line can easily support one another: but fire becomes plunging when the enemy arrives at short ranges, it is not easy to conceal the trenches, and dead ground often lies below them. These drawbacks may be overcome by placing the trenches near the foot of the slopes, but the geological formation of the hills may make the construction of communication from low sited trenches to the rear more than usually difficult. If a high sited position is preferred, the base of the hills should be swept by enfilading fire. Trenches for this purpose may often be hidden behind under-features, but even when this is possible they should always be provided with traverses or broken into short lengths. In both these types of position steep reverse slopes will often allow supports to do without artificial cover.

Positions of the third type, which are commonly found on the plateaux and in the larger valleys, generally command a wide field of fire, though it will probably be interrupted by water-courses and undulations, which may form covered approaches or rallying places for the enemy. If possible such cover should be fired into from the main position, but if this is not practicable advanced posts will often have to be used for the purpose, and these latter must be properly supported by fire from the main position. In cultivated areas it will sometimes be possible to cut the banks of irrigation channels, in order to flood dry water-courses and other low-lying dead ground and thus deny them to the enemy.

The construction of communications within the position, especially communicating trenches from the rear to the fire trenches, should be one of the first tasks to be undertaken, as it will require much time and labour,

As heavy rain often falls most unexpectedly, all trenches should be drained however settled the weather may appear. Villages, gardens, terraced fields and canals may be occupied by the firing line and supports in some districts, but it must be remembered that the ordinary type of building does not give protection against artillery.



High ground to a flank may command the position, or provide a screen for a hostile turning movement. The temptation to extend the front unduly in order to occupy such should be resisted; but picquets should be placed to watch it, and the local reserves of flank sections should be ready to defeat any attempt on the part of the enemy to use it.

With strong positions available the line may be held by small numbers. Gaps may be left, provided it is possible to defend them by flanking fire by day and to close them at night, and broader frontages may be given to units than be permissible on less favourable ground. Thus the enemy may be compelled to use a relatively large force for the general attack of the position and to weaken his reserve to a corresponding extent, while the defenders will be able to keep a strong general reserve in hand, or to hold a extended position without unduly weakening that body. But an commander ought to remember the principle that no ground, however strong, should be left entirely unprotected, for deserts may be crossed and precipices scaled by small parties.

The firing line should be self-supporting unless there has been time to make proper covered communication from the rear to the trenches. Where this has been done, supports may often be securely placed on steep reverse slopes or behind low cliffs which outcrop at the crests of ridges. In more level country a good deal of easily improved cover for supports and local reserves may be found in water-courses and undulations.

Gaps in ridges, depressions leading to the front, gardens and other enclosures may be used as starting points for local counter-attacks, and local reserves should be put near such places: but parallel spurs rather than re-entrants should be used for local counter-attack in hill positions. Strong local reserves should be stationed near points in the position from which parts of the line might be made untenable.

In enclosed country, and especially among wooded hills, only a small extent of front can be commanded by one man, and the position should be divided into narrower section than usual.

On a narrow battlefield it may not be difficult to move the reserve from the centre or even from flank to flank, except among mountains where troops march slowly and get quickly tired.

The Decisive Counter-Attack

§§ 100 (2). 108 (3) (5) and (7): 110.

Yet the farther the reserve has to go and the longer it is on the move, the less chance there is of surprising the enemy, so that if possible it should be placed from the first where it will be required.

When the counter-attack is made on the flank of a battlefield which happens to be bordered by hills, infantry picquets will be better able than cavalry to protect the flanks of the troops engaged in it. The whole strength of the cavalry may then be used to create an opportunity for the counter-attack, or to co-operate in other ways.

A central counter-attack is perhaps, more likely to succeed among hills than in other country, because while its flanks can often be protected by placing picquets on adjoining high ground, it is not, as a rule, easy for the attacking troops to support the threatened portion of their line.

Mountain guns will often be the best form of artillery to send with the counter-attack: the fact that an escort is almost always necessary for guns when they are pushed forward with attacking troops has already been referred to.

Subordinate leaders in the general reserve should be told the commander's intentions in full, because the counter-attack will often be much split up by difficult ground, and success will then depend on the initiative of junior commanders.

A favourable moment for the decisive counter-attack may occur when the enemy is entangled in the foot-hills which fringe so many of the positions, or when he is exhausted by attacking successive ridges in front of the main position.

Positions of readiness for the cavalry may be found in glens

Action of the Cavalry.

§§ 109 (1): 110 (3).

and valleys on the flanks. It will be advisable to protect them against surprise while they are waiting, by placing picquets on any high ground from which they might be fired on, but the picquets must be careful not to reveal the position of the cavalry

by exposing themselves to view. In the defence as in the attack several positions of readiness may be necessary, and arrangement should be made for communication between them.

Among mountains, if lines of retreat suitable for horses can be found, small bodies of dismounted cavalry may be used to hold screening positions, as the speed with which they can get away gives them an advantage over infantry in this work.

The ground will seldom allow many guns to be placed together, and arrangements should be carefully planned to ensure communication not only between the artillery as a whole and the rest of the force, but also between the batteries on different parts of the position. It will generally be possible to place guns so that they can enfilade the attack to some extent, and exits from mountain passes or other defiles will often lie within heavy artillery range of the position. The enemy may be tempted by the presence of cover to move his reserves or cavalry within range of the defences where indirect fire, especially from howitzers, may be brought to bear on them, if their movements have been observed and reported to the artillery commander.

Some guns should be placed so as to help the local reserves of flank sections to drive back hostile turning movements, but the positions chosen for them should not prevent them from being used in the general plan of defence.

A good deal of labour must be expended in making roads to enable the guns to move about the position, and it will generally be necessary to clear tracks between alternative emplacements, and between indirect and direct fire positions. The soil will often be so unworkable that the gun detachments will require help in making emplacements for the guns.

In the hilly tracts, as a general rule, infantry will have to be employed to hold screening positions, but as already stated, dismounted cavalry may sometimes be used for the work. When the slopes leading back from a ridge which is being used as a screening position are steep, the advanced troops may hold on to it until the enemy gets comparatively

#### Action of the Artillery.

§ § 108 (3) and (5): 109 (2) and (3): 110 (2).

#### Withdrawal of the Advanced Troops

§ § 108 (4): 109 (1).

close : for as soon as the men have moved a short way down the slope, parties in rear will be able to cover them by opening fire over their heads on to the ridge, thus preventing the enemy from coming far enough forward to fire down upon them while they are still within close range.

Advanced troops may, perhaps, puzzle and exhaust the enemy more readily among the mountains, but almost everywhere the troops in the main position can be so well hidden that the enemy's plans may be much upset, if advanced villages, gardens, canals, low hills and other features are skilfully held.

### **The Encounter Battle.**

The probable difficulty of unreconnoitred ground may cause a commander to hesitate when he meets the enemy unexpectedly ; but bold action is more than ever likely to be successful, because the enemy will also be inclined to hesitate, and because, if the army has to stand on the defensive eventually a strong position can usually be counted on near at hand. When roads are narrow and columns consequently long, the danger of troops coming piecemeal into action is, as already noted, unusually great. It is, therefore, important that news of the situation should be sent back along the columns, and that transport and noncombatants should be cleared off the roads in order that the troops may come up more quickly. In hilly country detached commanders should take steps to verify their idea of the situation, because the sounds of battle may not carry far, and their apparent direction is often unreliable.

### **Pursuit and Retreat.**

There will not usually be more than one line of retreat open to a beaten army, and often there will be no more than one road by which the main body can retire. Mountain passes and rivers in flood time, will cause delay, but, on the other hand, if the main body can get across them in time, such defiles will help the rear guard to hinder the pursuit. The manoeuvring area may be so narrow that the only way in which the pursurer can get in front of the retreating army, in order to cut it off

at one of these obstacles, may be to send lightly equipped columns though the difficult country on the flank. If the roads by which the main body must retire are blocked by transport, the commander of the retreating army may have to send similar columns to forestall the pursuers. The strength, composition, and equipment of such parties will depend largely on the terrain to be crossed. The victorious commander must allow no plea of exhaustion, or want of supplies, to stand in the way of an energetic pursuit, for results to be gained will justify him in pushing his men to the limit of endurance. A great deal of responsibility rest with the staff. It must be their aim to ensure that the best arrangements have been made to replenish supplies and ammunition, in order that the army may be able to meet the calls that will be made upon it.

#### Conclusion.

There remain a few points, which either have not been touched on in the preceeding pages, or require emphasis before this paper is concluded. Owing to the difficulty of the country between the various lines of advance, it is seldom possible to send reinforcements from one line to another, and the only help which a force on one line can give to that on another is to act energetically enough to draw a part of the enemy upon itself, and thus weaken the opposition which the other force has to encounter. It follows from this that the force on any one line of advance must be strong enough to defeat unaided any opposition which it is likely to meet.

The physical obstacles, which the nature of the terrain places, first, in the way of movement, and, secondly, in the way of reconnaissances, are very apt to tempt a commander into those half hearted measures "which never attain success in war." Owing to the difficulties of moving about, troops may be delayed to an unlooked for extent, or they may be stopped altogether if subordinate leaders are not determined to push on at all costs, and it is almost inevitable that heart-rending reports of the difficulties and exhaustion which the troops are experiencing

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\*All Masjid, and Afghan War, Official Account, p. 35,  
 Paiwar Kotal, " " " " " " p. 125,

will reach the commander, He must, of course, see that his Staff take all possible steps to lessen the difficulties which the troops have to face, but he must resolutely set his mind against the temptation to turn back from the plan which, after due consideration, he has decided upon as best. The difficulties in the way of reconnaissance will often leave the troops in doubt as to the strength of the enemy's forces in front of them. There have been many cases of advanced guards being stopped by shots fired by a few scouts, and indeed of whole columns being delayed by the mere possibility of meeting the enemy in rough country, when in reality there was no enemy in the immediate neighbourhood. A tactical combination, entered upon by the Italians in Tripoli, was spoiled by the column, which had been entrusted with the flanking movements, being delayed in this manner among the sand dunes to the South of the Oasis. \*

Lastly, although the business of supply is not discussed in F.S. R.I., Chapter VII., one may be excused for pointing out that, in a country like Afghanistan, the difficulty of feeding men and animals, and of bringing up ammunition and other necessary stores, may make a tactical manoeuvre impracticable, and the Staff should always consider how such difficulties can be overcome when issuing orders for a tactical movement.

So many difficulties have been dwelt upon that, perhaps, a word is required to guard the reader against forming an exaggerated picture of the mental and physical exertions, which a campaign in a terrain similar to that of Baluchistan and Afghanistan will demand from all ranks. The strain of a campaign in such a terrain will be severe, but at the same time it must be remembered that circumstances which present no problem have naturally been passed over in this essay, while the difficulties have purposely been discussed at some length. It would, of course, be folly in a commander to ignore these difficulties, but they should not loom too largely in his imagination, for courage and a strong determined spirit will never fail to find a way through them.

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\*4th December 1911, Personal Narrative.



## ***Fifty Years Sanitary Effort in the Army of India.***

*A Lecture delivered at Simla on 10th September 1913.*

**By COLONEL R. H. FIRTH, A.M.S., A.D.M.S., of the 1st (Peshawar) Division.**

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Surgeon-General Sloggett, C.B., C.M.G., K.H.S., took the chair, and said:—"Your Excellency, Ladies and Gentlemen, at the commencement of the season here the Committee of the United Service Institution asked me if I could arrange for a lecture to be given on the improvement of health in the Army since the Mutiny. It is one of the usual lectures which we have during the season here. I said I should be delighted to do so and I approached Colonel Firth and asked him if he would kindly consent to deliver the lecture. After a good deal of persuasion, forcible persuasion, on my part, and extreme reluctance on the part of Colonel Firth, partly due to his innate modesty and partly due to his fear that the subject would be such a dry one and uninteresting to the general public, he consented to give the lecture and here he is straight from Peshawar.

"I do not think Colonel Firth needs any introductions in Simla. He is such an old friend here and so well known in Simla that really no introduction is necessary. Nor do I think the subject needs an apology, because really the improvement, not only in the health of the army, but in the health of the general British population of India, has been so wonderful during the last 50 years that I feel certain it is a question of great interest to every intelligent and thinking person. Colonel Firth has made this subject a special study of his life time and I think I may say, without any flattery to him, that he is one of the greatest authorities living on the subject of sanitation and hygiene. Then too, if you think of the general population of India, the educational effect which the training of the Indian soldier must have, must be a great source of good amongst the population when that man leaves the army and goes back to the reserve and goes to his native village.



“With these few remarks I will, with your permission, ask Colonel Firth to commence his lecture.”

*Colonel Firth.*—Finding myself deputed to deliver this lecture before the Institution I early recognised that the task set me was far from easy. The difficulties lie in the fact that the subject is largely technical, bristles with figures, and is one peculiarly difficult to explain to a non-technical audience in an interesting or intelligent form.

In selecting the title “Fifty years of Sanitary Effort in the Army of India,” one was actuated by the idea that it afforded a means of reviewing the progress of sanitation in the army and its associated results over a period practically synchronous with the present system of administration in this country. Fifty years carry us back to 1863, a year sufficiently remote from the upheaval of 1857 to present stable or normal conditions, and a year practically identical with the inception of systematic statistical returns concerning the health of troops. By Sanitary Effort, one means all those activities which aim at and contribute to the well-being of a community; it, more particularly, embraces those principles and practices of Preventive Medicine upon which all sanitation is based and, by adherence to which, sanitary effort becomes a real thing and not merely a name. By the expression “the army of India,” one includes both European and Indian troops serving in the country.

To the thoughtful soldier, the presentment of a review of this nature calls for no apology; to the official civilian, its value may not be so evident but, even to him, confronted now with the great task of initiating and applying sanitary effort among and to the masses of India, a review of our experiences in military life should not be without interest, nor devoid of a lesson. It is true, the facts of which I am about to speak relate to but some 200,000 persons, a community small when compared with the 280 millions of people in India; but, even so, the results among the lesser number have been so good that they afford a very definite encouragement to those embarking upon the greater task.

The strength of the military community, during the fifty years under review, has varied and so has its distribution. I need not weary you with those details; it will be sufficient to

state that, in 1863, the average daily strength of the European army was 67,525 non-commissioned officers and men, and that of the Indian army was 58,462 non-commissioned officers and men; the corresponding strengths in 1912 were 71,001 and 132,232 non-commissioned officers and men. During fifty years, the average strength of the European army has been 63,166 non-commissioned officers and men, 1,957 officers, 4,956 women, and 9,533 children. The corresponding average strength of the Indian army has been 105,871 non-commissioned officers and men, 1,751 European officers, and 1,693 Indian officers. The data concerning the well or ill-being of these persons, during the last half century, have been taken from the annual reports rendered by the Army Medical Service to the War Office, and from the annual reports of the Sanitary Commissioner with the Government of India. The earlier returns in both series present some fallacies and ambiguities, mainly because they were not prepared with the exactness and attention to detail which characterises our modern reports, and also because the nomenclature of some diseases, current in the sixties, is not consistent with our present time nomenclature. The difficulties from these causes have been increased by the fact that in all earlier returns, that is down to 1876, the facts are considered separately for the three presidencies of Bengal, Madras and Bombay. In spite of these defects, one has been able to marshal the data in a sufficiently exact form, to enable me to affirm that the details, which I am about to put before you, are correct and afford a true picture of the circumstances during the period under review.

You may ask, what evidence from these data, can be accepted as an index or criterion concerning the health of the communities to which they relate? The evidence upon which we can rely is, the numbers constantly sick, the numbers dying, the numbers invalided, and the numbers admitted for and dying from the more common preventable diseases. To avoid difficulties in your being able to follow me, a series of tables has been distributed to you which give the essential facts, arranged in quinquennial periods and for the two standard years, 1863 and 1912. For the most part, the figures in those tables represent ratios per thousand of strength or men serving, but in certain

### **30 Fifty Years Sanitary Effort In the Army of India.**

columns some actuals are given as likely to be of aid in grasping the magnitude of the disease and mortality which has prevailed. By putting the facts, largely, in the form of ratios, the figures are all strictly comparable and render unnecessary repeated references to the varying numbers present or serving in particular years. Moreover, with the exception of the figures relating to Indian troops prior to 1877, all the facts are expressed as for "all India," that is irrespective of Presidencies or local armies; unfortunately, the facts are not available, between 1863 and 1876, for the Indian troops in Madras and Bombay. This circumstance tends towards an overstatement of sickness and death rates, in the earlier years, as representing the facts for "all India," and for which larger area all the later figures relate; as we know that troops in Madras and Bombay suffered much less than those serving in Bengal and Upper India. Further, it should be noted that all the data refer to peace conditions or ordinary garrison life. In order to make the best use of the time at disposal it will be convenient to take you, first, over the essential facts in respect of both communities, Indian and European, and then discuss the causes or circumstances which have produced the facts or results and finally, draw from these results such conclusions as seem appropriate. Owing to the wealth of detail, presented by the subject, a serious difficulty is how to simplify its presentment, by the omission of detail, without sacrificing the accuracy of the picture one wishes to portray. Inasmuch as the data relating to Indian troops present fewer complexities than do those relating to European troops, I will begin with the facts associated with sepoy of the Indian army.

#### **INDIAN TROOPS.**

If you look at Table I, in the third column, you will find given the constantly sick rate for each thousand men serving. In 1863, forty six men of every thousand men were in hospital, that is were constantly sick or non-effective from some form of illness. That figure is the Bengal army ratio and, as expressive of "all India," is probably too high for reasons given. From facts within my knowledge, I am disposed to put the "all India" ratio as having been in that year not more than forty. In 1912, only 19·3 per 1000 men were correspondingly non-effective; this, of course

**TABLE I.**  
**INDIAN TROOPS.**

Period.	Average Annual Strength	RATES OR CASES PER THOUSAND OF STRENGTH.										YEARLY OR QUINQUENNIAL ACTUAL.			
		Constantly Sick.	Deaths.	Invalided.	Wastage.	Malaria.	Non malarial Fevers	Respiratory Diseases.	Phthisis.	CHOLERA.		Invalided.	CHOLERA.		DYSENTERY.
										Cases.	Deaths.		Cases.	Deaths.	
1863	Bengal only { 37459 36670 39838 54148 118854 111281 127433 128518 125013 125278 130272	46.2	14.6	16.4	31.3	772	20.2	36.6	1.0	2.6	1.5	547	97	57	109
1863-77		45.4	13.9	17.2	31.1	747	17.6	37.2	1.4	4.6	2.3	254F	843	422	440
1868-72		43.2	15.1	19.7	34.8	710	15.3	46.0	2.3	4.1	5.5	3007	816	498	466
1873-77		38.8	12.1	30.2	42.3	644	18.1	54.5	2.4	2.8	1.5	3519	768	406	406
1878-82		48.2	24.6	35.0	59.6	764	23.5	85.2	2.6	3.1	1.8	15807	1842	1069	1070
1883-87		32.3	12.3	22.6	36.4	441	25.3	49.6	5.6	2.2	1.2	7122	1224	667	657
1888-92		35.6	14.2	14.2	28.4	487	25.5	46.3	2.8	3.1	1.9	9047	1911	1210	1146
1893-97		30.6	11.0	14.5	25.5	3.2	28.3	40.4	2.7	0.6	0.4	7069	385	359	321
1898-02		29.5	11.4	12.5	23.9	325	26.1	37.7	3.9	1.4	0.8	7196	875	499	500
1903-07		23.4	7.9	7.3	15.2	226	27.8	31.7	5.8	0.5	0.3	4948	313	187	188
1908-12		50.9	5.6	5.5	11.1	177	24.5	34.8	2.7	0.5	0.3	3647	325	196	195
1912	132232	19.3	4.4	4.5	9.0	88	44.0	32.8	2.1	0.6	0.5	685	85	59	26

### **32 Fifty Years Sanitary Effort In the Army of India.**

is the ratio for all India. The difference between the two years is great. The rates for all intermediate years are not given in any of the tables, as it meant confronting you with a mass of figures of doubtful interest. The period between 1863 and 1912 is divided into quinquennia, and for each of these five year periods the various rates are given. A scrutiny of the constantly sick column shows that there has been a steady fall to the present satisfactory rate, marred only by rises in the two periods, 1878-82 and 1882-92. The former rise was due to the return to India of men who had been serving with their units in Afghanistan ; while the second rise was due to the exceptional prevalence of cholera, dysentery, pneumonia and malaria in the years 1890-1 and 1892. From the point of view of numbers constantly non-effective, the fact needs to be appreciated that, in 1863, out of 37,459 men serving, in the so-called Bengal army, 1724 of them were in hospital each day ; for the whole Indian army of that year, having an average strength of 58,642, not less than 2345 men were non-effective and in hospital each day. If we take the year 1877, out of a strength of 113,966 men, as many as 3,669 were similarly non-effective throughout that period ; yet, in 1912, out of a greater strength of 132,232 only 2,560 were constantly sick.

Passing to the next column in the same table, it shows the death-rates in the same way. In 1863, we find that practically fifteen men died out of each thousand present ; that figure is for the Bengal army alone and, for all India, is probably represented by one of twelve. In 1912, for all India only 4·5 succumbed. In actual deaths, on the Bengal figure, the difference between 1863 and 1912 is a loss of 879 men from a force in all India of 58,642 in the former year, as compared with a loss, in the latter year, of 585 men from a force of more than twice the strength. The rates for the intermediate years show irregularities, but the general trend is towards a steady fall. The years 1879 and 1880 give abnormally high death-rates for the whole of India ; they were respectively, 35·15 and 39·22 and reflect the influence of the return of men from Afghanistan. The actual deaths were 4,257 in 1879 and 4957 in 1880. The same characteristics are observable in the next column giving the invaliding ratios. Here, we find a

drop from seventeen in 1863 to 4·5 in 1912. The former figure is for Bengal only and, for all India, would probably be represented by fourteen or even fifteen. The fall has been reached only after considerable oscillations in the rate; and the ten years 1873 to 1882 show, in particular, very high figures, such as 36·8 in 1873, 39·3 in 1878, 35·7 in 1879, 39·9 in 1881 and 34·2 in 1882. These increments are reflections of the constantly sick rates for the same periods and are dependent on the same causes. The true importance of the figures for deaths and invaliding is shown really in the column of the Table which indicates what has been the wastage from deaths and invaliding combined. The wastage column constitutes, virtually, a summary of the preceding columns and, like them, shows a remarkable drop from a wastage of thirty one for the Bengal army, in 1863, from each thousand men to a corresponding wastage of nine per thousand in 1912 for all India. The disparity is equally manifest if we take the first year for which we get "all India" figures, that is 1877, and one undisturbed by war influences. That year, with a strength of 113,966 men gave a wastage of 3,646 men or a ratio of 39·5 per thousand, as against a wastage of 1190 in 1912. This is equivalent to an annual saving of 2,456 men.

In a lecture of this kind it would be inappropriate, even if it were possible, to analyse critically all the disease headings and their rates of prevalence or mortality, as contributing to the broad features already outlined. The most that one can do, and that probably is all that is needed, is to review briefly the facts as presented by the more dominant preventable diseases. In the case of the Indian soldier, they do not number more than half a dozen, and the main facts as to their incidence are given in the remaining columns of Table I. The first is that perennial source of inefficiency, the disease called malaria. In the army, thanks to discipline and efficient treatment, malaria contributes little to the death roll in these days; but, in the past, we have much evidence that it was otherwise. The figures in the table, under the head of malaria represent the number of admissions to hospital for treatment for that disease given by each thousand men. The figure for the year 1863 is 772, and represents really the Bengal army ratio; for all India, or the whole of India of

### **34 Fifty Years Sanitary Effort In the Army of India.**

that day, it probably was not higher than 750. For 1912, in the whole Indian army of India, the figure is the much more modest one of 88, a difference which is suggestive of the change which has taken place. The ratios for quinquennial periods indicate a steady fall with the exception of the five years, 1878 to 1882, a period we know reflects the disturbing influence of the Afghan War. Apart from this the intermediate years between 1863 and 1912 yielded some very high rates of malarial prevalence though, from the manner in which the Table is prepared, they are not specifically shown, but betray themselves in the quinquennial averages. Thus, the year 1869 was a bad malarial season, giving in the army of Bengal an admission rate of 866; the following year was little better, as it gave a rate of 838. The next bad years were 1876-8 and 1879; this latter year gave the appalling admission rate for the whole Indian army of 978 for each thousand men, which means that in that year there were 110,435 admissions for malarial fevers, or nearly as many admissions as there were men serving. The following year gave an almost identical figure, for all India, as that of the Bengal army for 1863, this was clearly the heritage of infections from 1879; but, it is the last year in which a rate of over 700 is recorded, while 1881 and 1892 are the last years in which the malaria rate in the Indian army has exceeded 600 and 500 respectively per thousand of strength. Within the last twenty years, the rate has never exceeded 300 and, at present it hangs about 90, or roughly less than one eighth of what it was fifty years ago.

The next column shows the heading "non-malarial fevers," and embraces figures for a large group of pyrexias of possibly mixed causation. For the earlier years, the rates are for remittent and simple continued fever while, since 1908, they come under the heading of pyrexias of uncertain origin; a non-committal term which commends itself to this more critical age. Throughout the fifty years, this group of fevers embraces also the disease known as enteric fever. If you look at the figures in this column, you will notice that they have varied very little over the whole half century, a fact which supports the view that throughout they refer to the same diseases, though labelled

somewhat differently. To my mind, they represent the combined prevalence of simple continued fever, of sandfly fever and of enteric fever. The first named may be the result of a sun-exposure or a dietetic indiscretion and has little sanitary significance; the second is of quite modern recognition and a disease whose name betrays its causation; the third, though it has been known since 1849, finds no record in the statistical returns of the Indian army until 1905. For many years after enteric fever began to be shown in the health returns of the European army, there was a curious reluctance among medical officers doing duty with Indian regiments to admit the existence of enteric fever among Indian sepoys. That attitude does not pertain in the present generation, by whom an increasing number of cases of the disease are being detected and shown in the returns. But, even now, it cannot be admitted that the number of cases and deaths from enteric fever recorded in the Indian army returns, represent fully the real incidence of that disease among sepoys. The following table, shows the facts, as recorded for recent years, in respect of enteric fever among Indian troops.

Year.	Admissions.	Deaths.
1905	130	35
1906	127	34
1907	182	44
1908	350	73
1909	284	57
1910	329	58
1911	302	55
1912	234	43

In leaving the subject of the non-malarial fevers, we may infer that, while the figures show practically no change in the fifty years as to prevalence in the Indian army, there is other evidence to show that their nature is much better understood now than it was in 1863. In this fact, lies our real hope of their future diminution.

Respiratory diseases call next for attention. Their average incidence during the fifty years, has been about forty, in all India, for each thousand men serving. The rate was exceptionally high in the five years, 1878-82, for reasons which we know; at



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the present time, their prevalence is much as it was in 1863 and, taken as a group, their mortality is negligible though, as a cause of inefficiency, it is a class of sickness which needs scrutiny. While bronchitis and ordinary catarrhs make up the bulk of cases under the head of respiratory diseases, that heading includes the figures for that infectious disease, called pneumonia. Among Indian troops, this disease assumes at times epidemic form and contributes proportionately to the death-rate. While for the fifty years, the incidence of pneumonia among Indian troops has been at a rate of 12·24 per thousand there have been years in which this ratio has been much exceeded. Thus, 1880 gave a rate of 26·7 and 1879 one of 20·8; similarly, 1875 had one of 19 and 1881 an attack rate of 17·5, while, 1890, 1898 and 1899 also give a figure over 16. The severest incidence seems to have been in the two decades of 1873 to 1882 and 1893 to 1902, in which twenty years no less than 30,723 admissions to hospital for this disease took place associated with 7,984 deaths. Of recent years, the number of cases has diminished sensibly but, even for the last quinquennium, the attack rate is 7·4 and the death-rate 1·9. Pneumonia appears most frequently in the returns from troops stationed in the Indus valley, in frontier garrisons of the north-west, and in the hill stations of an altitude below 5000 feet. Its prevalence in these localities is due partly to climatic austerities and to overcrowding in huts or barracks, in which once a few cases have occurred, the infectious nature of the disease soon manifests itself as an epidemic.

The next column furnishes figures as to the prevalence of phthisis or tuberculosis of the lungs, from which it will be seen that the present time shows an increased rather than a lessened prevalence as compared with the earlier years of the past half century. A striking feature of the statistical returns is, that they afford overwhelming evidence that it is among Gurkhas that the disease has increased. The accompanying tabular statement shows the essential facts for recent years. There are signs that this increment of tuberculosis among Gurkhas is checked but, even now, that class show an admission rate and a death-rate for this disease just twice as great as prevails among other races, constituting the rest of the Indian army.

## **Fifty Years Sanitary Effort In the Army of India. 37**

	Army of India.		Gurkhas.		Excluding Gurkhas.	
Years.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.
1901	4·1	0·84	13·1	3·95	3·4	0·57
1902	4·3	0·80	15·6	4·24	3·2	0·47
1903	5·9	0·68	28·9	2·88	3·3	0·44
1904	3·9	0·51	10·6	2·66	3·2	0·28
1905	3·1	0·50	6·1	1·58	2·7	0·37
1906	2·5	0·52	5·2	2·41	2·2	0·29
1907	2·5	0·33	4·8	1·03	2·3	0·24
1908	3·0	0·42	5·0	1·43	2·7	0·28
1909	2·3	0·39	4·0	1·33	2·1	0·36
1910	2·4	0·19	3·7	0·62	2·3	0·15
1911	2·1	0·21	3·6	0·70	1·9	0·14
1912	2·1	0·22	3·8	0·84	1·7	0·15

We pass, now, to a consideration of the figures which testify to the greater or lesser prevalence of that dreaded disease, cholera. In the past, it is no exaggeration to say that cholera was a veritable nightmare to the whole military administration ; and rightly too, for its manifestations were intensely explosive in character and accompanied by a toll of life that few in this generation realise. We shall see this more when the figures for the European army are passed in review. The figures, as presented for the

	Rates per thousand of strength.		Actuals.	
Years.	Attacks.	Deaths.	Attacks.	Deaths.
1865	5·7	2·8	183	91
1866	4·7	2·6	176	94
1867	6·2	3·2	244	124
1869	8·5	4·9	341	196
1872	7·0	4·7	276	182
1875	3·4	1·7	134	66
1878	3·8	2·1	440	242
1879	7·4	4·6	894	558
1888	3·2	2·2	399	274
1891	4·5	2·6	578	339
1892	3·3	2·2	421	280
1900	5·2	3·2	642	391

Indian army in the table, may suggest that the incidence of cholera among them, in the past, has been exaggerated; but you must bear in mind that the rates given are for "all India" and for five year periods, consequently, the heavy incidence of the disease in certain areas and in individual years is masked. The accompanying tabular statement gives the facts for a dozen of the worst years, but, for reasons already given, the figures prior to 1876 relate only to the Bengal army. The figures of actuals, especially those in Table I, give cause for serious thought. Taking the whole Indian army, it has to be recorded from the facts which are before you that, in the past fifty years, it has given by cholera no less than 5,509 deaths; of these, 920 occurred in the first decade and 1475 in the second. For both periods, the figures are an under-statement, as they are not inclusive of the bills of sickness and mortality in the Madras and Bombay armies of those times. Of the remainder, 1877 deaths occurred in the third decade, 856 in the fourth, and only 455 in the last ten years. In appraising the significance of these figures, it is to be borne in mind that the population exposed to risk in the last thirty five years has been more than twice as large as the population to which the figures relate in the first fifteen years.

There remains, still, the question of the prevalence of dysentery in the Indian army; the figures relating to it are given in Table I. It will be noted that this disease, which is essentially both infectious and preventable, contributes a very heavy attack rate to the health returns but a relatively low death-rate. To some extent, this latter feature is due to the circumstance that many chronic dysenteric cases are invalided out of the service, and which must have contributed, ultimately, to its death-rate. Taking the facts, however, as we find them, it is obvious that between the incidence in 1863 and that in 1912, there is a gratifying difference. The same is true of the death-rate. But, even so, it must be admitted that the number of admissions to hospital for this disease, as indicated in the figures of actuals, is far from satisfactory and calls for greater sanitary effort.

**TABLE II.**  
**EUROPEAN TROOPS.**

Period.	Mean Annual Strength.	YEARLY RATIOS OR CASES FOR EACH THOUSAND MEN SERVING.										YEARLY AND QUINQUENNIAL ACTUALS.			
		Constantly Sick	Deaths.	Invalided.	Wastage.	Malaria.	Phtisis.	Dysentery.	Hepatitis.	CHOLERA.		Invalided.	CHOLERA.		ENTERIC.
										Cases.	Deaths.		Cases.	Deaths.	
1863—67	67525	62.6	23.6	34.4	58.0	438	12.6	48.7	63.7	5.5	4.1	1594	371	277	—
1868—72	62202	59.3	24.8	42.6	67.4	313	12.8	44.8	57.6	7.4	4.9	7703	2305	1499	—
1873—77	56095	57.4	25.1	42.7	67.8	361	8.2	42.6	52.6	8.5	5.4	7058	2417	1591	168
1878—82	59040	54.6	15.7	41.3	57.0	271	13.5	37.4	45.1	9.2	1.4	4576	657	4.2	462
1883—87	54370	68.1	20.5	39.1	59.6	569	7.2	42.8	35.7	5.7	4.2	6345	1573	1131	896
1888—92	59661	69.3	14.1	26.2	40.3	301	6.1	3.8	26.6	2.2	1.5	4124	633	434	1144
1893—97	67680	82.1	16.2	25.2	41.4	379	3.4	29.6	23.2	2.3	1.6	5455	789	542	1766
1898—02	68838	93.4	15.7	27.6	43.3	363	4.1	31.6	18.8	1.3	0.8	5349	813	603	2215
1903—07	63008	73.6	15.5	35.8	51.3	309	6.2	24.4	20.2	0.5	0.4	4904	151	113	1768
1908—12	70109	54.4	10.7	28.0	38.7	172	2.4	14.0	14.6	0.5	0.4	3780	172	117	1187
	71133	35.2	5.8	9.1	14.9	150	1.2	9.2	7.9	0.4	0.3	2076	140	107	401
1912	71001	28.8	4.6	6.7	11.3	82	1.2	5.2	6.1	0.3	0.2	328	19	10	28

## EUROPEAN TROOPS.

We are, now, in a position to consider the facts as presented by the statistical returns relating to the European army of India and see how far sanitary effort has succeeded or failed among them, during the past fifty years. Encouraging as the results have been in respect of Indian troops, those relating to the European army of India are infinitely more so. To illustrate what I have so say concerning this group, Table II has been prepared. To that tabular statement, I ask your attention. It is planned on identical lines as Table I, which we have been considering; and, if you have been able to follow me over the one, you will have little difficulty as to this other.

We begin with the rates for those constantly ill. In 1863 sixty-three men out of each thousand serving were constantly in hospital; in 1912, only twenty-nine were so non-effective. As you look over the figures, you cannot fail to be struck by the fluctuations which have taken place; very striking increments of constantly sick occurred in the twenty years from 1883 to 1902. So much so, that it may surprise you to hear that the ratios for 1883 and 1903 were practically identical with that for 1863, they being respectively 64 and 63·2; in other words, so far as the numbers constantly in hospital are concerned, there was little or no improvement for the first forty years out of the fifty, the change for the better manifests itself only in the last decade. The causes of this, one will discuss later on. Anyhow, we have the remarkable fact before us that, whereas in 1863, out of an average strength of 67,525 men, there were always 4,227 men ill in hospital; yet in 1912, with an average annual strength of 71,001, there were but 2044 similarly non-effective.

If you look at the next column, showing death-rates, a no less striking difference between the first and the last years of the half century is apparent; a death-rate of twenty four has become one considerably less than five or, in fact, the figure for the alien soldier from the West, serving in the East, is identical with that current for the Indian soldier serving in his own land. The death-rate for European troops, during the fifty years, has not shown the oscillations presented by their constantly sick rate;

but it is worth noting that the five years, 1878 to 1882, show a definite interruption to the steady fall which is, otherwise, the feature of the series. That rise is traceable to the influence of mobilisation on a large scale connected with the last Afghan war. To sum up the extremes, or first and last of the fifty years in terms of actual deaths, we can put it that the difference between 1863 and 1912 is between a loss in the former year of 1594 men, out of a force of 67525, and a loss in the latter year of 328 men from a force of 71,001; or, had our present death-rate been current in 1912, then, instead of a loss of 328, there would have been but 311, or a saving of 1283 lives. Conversely, had the death-rate of 1863 been current in 1912, then instead of a loss of 328, there would have been a loss of 1676 men or 1347 more than there were actually. A reference to the columns of actuals in the Table will show that, in the fifty years, the total loss by death in the European army of India has been 51,372, or an annual average of 1,017 deaths; the average for the last five years has been 415.

The invaliding rates, as given in the next column, call for no extended comment. They show a more or less steady fall from 34·4 in 1863 to 6·7 in 1912. The two quinquennia of 1878-82 and 1898-1902 are periods in which individual years yielded an increased number of invalids. The former reflects the influence of a trans-frontier campaign, while the latter reflects the results following the diminished arrival of young soldiers in India and the retention of men out here who, otherwise, would have gone home as time-expired. These disturbed conditions were the effect in India of the South African war. The numbers of men actually invalided in the fifteen years, 1863 to 1877, are instructive as showing the influence of long service men in the ranks as compared with the actually invalided in the quinquennia, 1883-7 and 1893-7, in which a short service system prevailed. Further, it is to be noted that the marked reduction in the invaliding rate, characteristic of recent years, has synchronised with the reduction of the death-rate, showing that neither result has been secured at the expense of the other.

The figures as to wastage are but a summary of the losses by deaths and invaliding. They call for no special analysis; all

one would say in respect of this series of ratios is, that the actual wastage of men lost from the army in 1863, was 3,918, while in 1912 but 802 men were so lost, namely, 328 who died and 474 invalided ; also, that had the same wastage rate existed in 1912 as existed in 1863, then the total loss from the European army, in 1912, would have been 4,118 men or 3,316 men more than we actually did lose under our improved conditions.

We are now in a position to consider the facts as to the more common preventable diseases among European soldiers in India, and see how far sanitary effort has affected their prevalence and mortality. Only six diseases call for consideration ; the main facts as to them are given in Table II. The first on the list is malaria. As in the Indian army, this infectious disease contributes largely to inefficiency. In 1863, every thousand men serving gave 438 admissions to hospital for malaria in the year ; in 1912, the same number of men gave but 82 admissions, or a drop to less than one-fifth in the fifty years. The table does not give you the rates for individual years, but merely the mean for each quinquennium. Again, we find that the five years, 1878-82, give a figure in excess of any other period, probably owing to the circumstance that at that time there were a number of men in the ranks who had served and become infected in Afghanistan. The figures, generally, show a steady fall, period by period.

For European troops, it is unnecessary to consider the prevalence of non-malarial fevers, as a group, owing to the fact that we shall consider the most important of them, namely, enteric fever, separately. Neither, need we review the respiratory diseases, as a group, for they play but a small part in conducing to inefficiency. Their incidence in 1912 was a ratio of 11·7 as compared with one of 71·8 in 1863. Similarly, we need not specially review the prevalence, among European soldiers, of pneumonia except it be to remark that, at the present time, it prevails to about the same extent as it did in 1863. In the thirty years, from 1873 to 1902, the incidence increased from causes which it is difficult to explain other than by the fact that those thirty years were the darkest in respect of sanitary effort in the army.

I ask, however, your attention to the facts relating to phthisis or tubercular destruction of the lungs which are given in Table II. The figures as to tuberculosis of the lungs are suggestive of a definite progress. The high ratios which mark the first fifteen years of the period under review are undoubtedly the index of an indifferent hygienic standard as to barracks, in respect of ventilation and overcrowding. Those familiar with the report of the Royal Commission on the health of the army, published in the early sixties, and with the writings of Parkes and de Chaumont of about the same time will see in those high phthisis rates of 1862-7 a full justification of the teaching and recommendations of those pioneers in army sanitation which, by subsequent recognition and adoption, have led to the very low incidence of phthisis or pulmonary tuberculosis recorded, as now prevalent, in the figures before you. A unity ratio per thousand for tuberculosis of the lungs in 1912 is eloquent testimony as to the existing satisfactory condition of European barrack rooms in India.

Your attention is asked, next, to the column having the heading of "hepatitis" in Table II. By this term one gives the figures as to the prevalence of abscess of the liver and other inflammatory states of that organ, peculiarly associated with a residence in the tropics. You will note the remarkable difference between a ratio per thousand of 63.7 in 1863 of 6.1 in 1912. The intermediate years show a steady fall and call for no particular reference. The prevalence of this group of affections is intimately associated with the prevalence of dysentery and also with intemperate habits. The facts as to dysentery in the European army will be considered immediately; but, in connection with this remarkable diminution of hepatic disease among soldiers, it is interesting to see how far the admissions to hospital for alcoholism, during the last fifty years, refute or confirm the alleged relationship between the two series. One need not weary you with a mass of figures, but limit oneself to essential facts. They are that in 1863 the actual admissions to hospital for alcoholism were 151, ten years later they were 249; in 1883, they had risen to 477, but fell to 306 in 1893; by 1903, they were down to 164; three years later they were but 86, in 1909 but 57, and in 1912 they were 31. We see, therefore a definite parallelism between the two series of admissions and,



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for my own part, credit this movement towards abstinence as a decided factor in the reduction of hepatic disease among European soldiers in India, and, moreover, as a legitimate manifestation of sanitary effort.

Dysentery heads the next column in the table. It is noticeable that this disease conduced in the past and conduces in the present to a much less amount of sickness and inefficiency than in the Indian army. The series of figures shows a more or less, steady fall through the fifty years. In that respect, dysentery in the European army follows the same course as hepatitis, and a ratio of prevalence of 84·7 in 1863 has become one of 5·2 in 1912. One need say nothing further about this.

The figures for cholera call now for examination. It will be seen from the table, that the prevalence of this disease in any magnitude has been limited to the first twenty years ; on a much less severe scale in the next fifteen years, and in a very mild degree in the last fifteen years. What was said concerning cholera among Indian troops applies equally to the European army. The enforced arrangement of the figures, as expressing mean ratios for quinquennia, masks the real incidence of the disease in individual years. Certain years exacted a heavy toll

Year.	Admissions.	Deaths.	Years.	Admissions.	Deaths.
1863	371	277	1880	235	168
1864	241	162	1881	199	135
1865	269	194	1884	149	103
1866	135	81	1885	199	122
1867	1189	785	1887	158	127
1868	142	95	1888	204	129
1869	1439	972	1889	103	82
1871	119	63	1891	251	164
1872	634	426	1892	170	121
1875	288	194	1894	209	149
1876	205	136	1885	410	331
1878	305	226	1897	109	64
1879	737	544	1900	110	85

from cholera among European troops ; the most terrible was the year 1861, but that year is not within the range of this review. Of the last fifty years, those given in the accompanying tabular

statement are the years in which the European army has suffered from cholera, to the extent of more than a hundred cases in the year.

Since 1900, there have been three years only in which the total of cases exceeded seventy; they were, 76 attacks in 1903 and 55 deaths; also the year 1906 had 72 cases and 44 deaths, and 1908 gave 93 attacks and 73 deaths. The columns in Table II which show the actuals, both of attacks and deaths, demonstrate clearly the heavy toll of sickness and death which cholera has exacted from the European army of India. In the fifty years under review, no less than 6,559 European soldiers have died from cholera alone; of these, 3,090 died in the first decade, 1553 in the second, 976 in the third, 716 in the fourth, and 224 in the last ten years.

I would call your attention next to the question of the prevalence of enteric fever among European troops, the control and reduction of which disease constitutes the brightest feature in the history of sanitary effort in the army of India. You will observe that, in the table there are no figures for this disease in the first quinquennium. The reason is that, until 1871, the name does not appear in any of our statistical forms or returns. This fact does not mean that the disease did not exist among troops before that date; it merely means that it was not recognised officially and that cases, which are now known to be and called enteric fever, were in earlier days recorded under the general heading of remittent and continued fevers. A study of the earlier returns convinces me that, in the European army of the sixties, the disease which we now call enteric fever existed to the extent of some six or seven per thousand of men serving. After the introduction of the name into our official forms and returns in 1871, that the disease only slowly began to be recorded was due to the fact that for many years the older type of regimental surgeon, not only questioned its existence as a disease entity but had a difficulty in recognising it. It was not until the end of the seventies that army medical officers were, generally, able to diagnose the disease with confidence and freedom from prejudice; and, even then, it is certain that the numbers of cases of the disease which were recorded really under-stated its prevalence. For that reason, we must regard the figures in the

table for the fifteen years from 1868 to 1882 as being but an imperfect record of circumstances then existing. From that date, until 1903, there is a steady rise in both the attack rate and the mortality rate.

Setting aside any question as to what part defective sanitary effort played during that twenty years, an undoubted contributory factor to the increase of enteric fever among troops at that time was the steady increase in numbers of young soldiers in the European army of India, following the introduction of the short service system at home in 1872. Its full influence was not felt in India, for some years, but the extent of that influence is shown, not only by the increased prevalence of enteric fever but, by the fact that the numbers of men below the age of 24 in the European army had risen from 33 per cent in 1877 to 55 per cent in 1898. Of the causes which have led to the reduction of both the attack and mortality rates from this disease, I do not propose now to speak. However, before leaving this subject of enteric fever, I ask your attention to the figures giving the actual numbers who have been attacked and died from that disease. Perhaps, the most impressive feature of those figures is the fact that, in the last fifty years, no less than 10,005 European soldiers died of enteric fever in India, a number far in excess of that attributable to cholera. Of these 10,005 deaths, only 166 are said to have occurred in the first decade, but for reasons given this figure must be considered as a serious under-statement. The other deaths are accounted for as 1,358 occurring in the second decade, as 2,910 in the third decade, as 3,983 occurring in the fourth, and as 1,588 dying in the last ten years.

Intimately associated with the reduced prevalence of enteric fever is the curious change which has occurred as to the ages of the men, over which the annual deaths of European soldiers have

Years.	Under 20	20-24	25-29	30-34	35-39	Over 40
1863	6'88	16'15	26'22	30'44	36'77	55'17
1886	13'72	17'24	13'75	12'15	23'42	17'72
1898	13'51	24'63	15'61	15'57	18'39	41'56
1904	2'72	10'70	11'43	12'74	10'81	22'57
1912	0'80	3'80	4'92	5'56	18'42	14'34

been and are now distributed. The accompanying tabular statement explains this sufficiently well; it gives the rates per thousand of strength, of the ages indicated of the deaths which occurred in various years of the period under study. Enteric fever being a disease peculiarly selective of the earlier years of manhood, the change in the ages of death or rather of men dying, before and after the initiation of direct steps to combat the disease, is manifest and furnishes corroborative evidence as to the existence of enteric fever among European troops in India, long before the disease appeared in the official returns of sickness and mortality.

Inasmuch as the majority of the other diseases, from which soldiers of the European army suffer, are either not amenable directly to sanitary effort or contribute but slightly to inefficiency and mortality, their detailed discussion is uncalled for. Exception must, however, be made in regard to what may be termed disabilities of incontinence, the outcome of a lack of will-power. In this category one places the enthetic diseases. From the wider standpoint as to what is sanitary effort, this group falls within the sphere of activities of the sanitarian: therefore, the lesser or greater prevalence now, as compared with the past, should be to the credit or discredit of sanitary effort in the army. The facts need not detain us long. In 1863, the admissions for enthetic disease amounted to 281 per thousand men: in 1873, the rate was 182, rising to 270 in 1883 and as high as 511 in 1893. Ten years later, it was down to 249, reaching 117 in 1906 and 68 in 1909. In 1912, it was as low as 55. In respect, therefore, of this group of diseases we must admit there has been a remarkable change for the better and, to the extension of the practice of abstinence and continence as sanitary precepts, we can credit sanitary effort as having appreciably contributed to the reduction of enthetic disease in the European army of India. It is curious to note that, even in respect of this disease group, the period of maximum incidence covers the eighties and nineties, or that twenty years in which, from other data, we have some reason to think that sanitary effort was least understood and least applied.

**OFFICERS.**

Concerning Indian officers of the Indian army we have no separate statistical returns, any casualties or sickness among them being included with those relating to the rank and file. As a class they suffer little from illness. As to European officers of the Indian army, we have no exact data prior to 1905. Those facts show that the number constantly ill or sick averages 20 per thousand of their number. Their death-rate is 4.2 per thousand, and the incidence of enteric fever among them is 6.1 per mille. Broadly speaking, the vital statistics of this class conform to the features presented by the corresponding class of the European Army in India, and what has to be said of the one applies equally to the other. Certain data concerning officers of the European army are given in Table III. From that table, it will be seen that the constantly sick rate in 1912 was 22.2 as compared with one of 29.2 fifty years ago. This is not a very remarkable drop and much smaller than that yielded by the men. The strength of European officers has varied; in 1912 the number with European troops was 2345, and their death-rate last year is a trifle lower than that of the rank and file or a fourth of what prevailed in the same class in 1863. The invaliding ratio for officers in 1912 was 16.24 per thousand present, and has been about that figure for some years. As compared with the corresponding rate of 6.68 for the men, the officer's rate seems high, but social circumstance makes the discrepancy more apparent than real. The worst feature of the group of figures relating to officers is the high rate of prevalence of enteric fever among them; their figure being nearly three times that of the men; it suggests a lower standard of sanitary effort in officer's messes and quarters than in the barracks and lines.

TABLE III.  
EUROPEAN ARMY  
RATES PER THOUSAND.

Period.	OFFICERS.				WOMEN.				CHILDREN.					
	Constantly Sick Rate	Death Rate.	ENTERIC FEVER		Constantly Sick Rate.	Death Rate.	CHOLERA.		Constantly Sick Rate.	Death Rate.	CHOLERA.		ENTERIC FEVER	
			Case Rate.	Death Rate.			Case Rate.	Death Rate.			Case Rate.	Death Rate.		
1863	29.2	17.5	...	...	31.5	43.7	4.9	2.4	...	...	28.8	4.8	3.3	...
1863-67	28.8	18.3	...	...	33.7	38.8	8.6	4.9	...	...	32.8	8.2	5.2	...
1868-72	25.2	16.7	...	...	32.5	35.6	5.7	2.8	...	...	32.3	7.3	3.6	...
1873-77	23.4	21.8	...	...	30.8	21.6	2.8	1.3	...	...	26.2	2.3	1.2	...
1878-82	25.8	17.5	8.0	5.1	32.2	23.0	3.3	1.6	2.5	1.1	27.0	64.5	2.9	0.5
1883-87	26.3	13.7	16.2	4.7	29.6	10.4	2.9	1.5	5.5	1.6	22.5	4.3	2.5	1.8
1888-92	29.5	24.4	28.3	5.6	24.8	17.3	2.2	1.0	7.7	2.3	21.6	48.6	1.8	0.4
1893-97	23.4	15.2	25.7	5.7	28.6	15.8	2.3	1.1	7.1	2.3	22.4	44.2	3.7	1.0
1897-02	28.2	15.3	27.6	6.2	24.3	15.2	0.5	0.2	7.7	2.9	21.9	1.6	4.4	1.2
1903-07	24.8	11.6	24.3	3.8	22.6	11.2	0.3	0.1	8.6	2.6	16.7	0.4	5.6	1.3
1908-12	21.2	6.4	15.2	0.8	20.4	8.7	0.2	0.1	8.6	1.9	14.3	0.2	5.6	0.2
1912	22.2	4.4	6.6	0.5	21.2	9.6	...	...	7.0	1.2	15.1	0.2	3.8	...

**WOMEN AND CHILDREN.**

Table III gives the chief data as to these classes belonging to the European army of India. The number of women has varied considerably in the fifty years; in 1863 they numbered 2,976 and in 1912, they were 4248. The greatest number present was in 1872, when they totalled 6,651, and the lowest was in 1864 when they totalled 2,706, but as late as 1894 the number dropped to 3,157. The constantly sick rate among the women which in 1863 was higher than that for officers, has dropped by 1912 to a point below the officer's figure. The same cannot be said for their death-rate; in 1863 it was 43.7 and in 1912 is 9.6; for both years, it is practically two and a quarter times as great as the officer's death-rate. This high mortality among the women is a far from satisfactory sign of the times; it is more than twice the death-rate prevailing among the same sex and age group at home, and twice as great as that ruling among officers and men in India. It is noticeable, too, that the prevalence of enteric fever among the women is enormously in excess of the same disease among the men. The small number of women inoculated against enteric fever may explain the disparity to some extent, but there are other factors at work and, as I shall have to show later on, we have not applied in respect of this disease the same principles and practices to the women and children as we have done to the men. No matter how we look at it, it is clear that the figures for the women in European lines do not show that progress, in the fifty years, which those of the men indicate to have been possible. A comparison of the cholera figures in Table II with those for the women in Table III will show how the incidence of that disease, in the past, affected both the women and the men in the same degree; typical instances of this fact are the excessive death-rates among the women in the two bad cholera years of 1867 and 1869, when the ratios were respectively 46.2 and 54.2 per thousand.

The number of children with European troops has varied much in the fifty years. In 1863, their number was 4,194 while, in 1912 they totalled 7046. The greatest number present was in 1874, when they were 12,393; and the lowest was in 1864 when

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they were only 4120. Their constantly sick rate has dropped

	Under 6 months.	Between 6 and 12 months.	From 1 to 5 years.
1863	351'4	234'6	115'3
1867	349'8	235'3	114'9
1870	303'11	222'2	109'7
1872	330'75	298'6	104'8
1880	290'73	210'3	75'2
1885	237'09	175'15	34'1
1890	236'74	156'8	35'5
1894	250'64	142'52	31'4
1900	213'77	115'64	34'8
1906	190'65	87'87	27'5
1910	135'72	63'99	11'7
1912	142'45	72'83	20'4

to about a half in the fifty years, standing now at fifteen per thousand on the strength. A glance at the death-rate column will show you how great and lamentable has been the mortality among the children, particularly in the earlier years. For example, in 1867, 513 children died or a ratio of 105 per thousand present: similarly, in 1869, no less than 826 died or a ratio of 145 per thousand. One, perhaps, ought to remind you that both these were cholera years and to that disease much of this excessive mortality among the children was due. In 1863, the death-rate was 90'2 and for the first ten years of the fifty, it kept near that figure and only slowly has it come down to the present rate of thirty-four. This figure of thirty-four is, of course, for children of all ages, that is up to 15 years; it is about one third higher than the rate at home for the corresponding age group of both sexes. This rate for children of all ages is not, however, the true criterion as to child mortality, which is best expressed by the mortality of children under one year of age. Judged by this standard, we find the records of infant mortality in the European army of India, during the earlier years to have been lamentable. The accompanying table shows the statistical facts in respect of infant mortality for certain years, taken haphazard out of the fifty under review. It speaks for itself, and you can see how



great was the loss of infant life even down to 1900. The rates given are much in excess of the infant mortality prevailing, between 1881 and 1900, in towns at home with many women engaged in industrial work where the infant mortality rate in that period did not exceed 211 per thousand. During the last two years, the death-rate for children in the European army has shown a rise; at its present figures both for infants and children of all ages, the death-rate out here is twice that of the same groups in London, and approximates closely to that prevailing at home in towns where most of the women are engaged in industrial work. Even, if we make allowances for the circumstances of a tropical and alien country, it cannot be said to be satisfactory, nor to the credit of a community who have only their domestic duties to perform. The prevalence of enteric fever among the children has fallen in the last five years, but its degree is associated intimately with the corresponding prevalence among the mothers; the same is true of cholera, for the epidemic absence of which, among both women and children, during the last twenty years, we cannot be too thankful.

Taking all the facts as we find them, we may now inquire how far these results have been the outcome of fortuitous causes, or how far they are the result of reasoned action on our part. Truly, man does not gather grapes of thorns or figs of thistles; so in the case before us, the annual saving of 1347 lives, the saving of a yearly wastage of 3,316 men from the ranks of the European army is not a harvest gathered from the tree of apathy; neither is the saving, since 1877, annually of 657 lives, or the saving of a yearly wastage of 2450 men from the ranks of Indian troops a reward for tilling in the fields of indifference. For these results and all they mean, we must look to reasoned action on our part, as exemplified by what I call sanitary effort. Here, let me remark that in thinking of sanitation or sanitary effort, you must free your minds of the idea that such cognates or is, merely, a matter of conservancy; to think in that narrow way is just as correct as to think of drill as being merely the manual exercise. In each case, the one is but a detail or a part of the whole. Therefore, in speaking of sanitary effort, one includes all our activities making for betterment in both

the mental and physical welfare of communities; that is, it includes such diverse activities as the development of moral character, the development of schemes for drainage and the provision of water supplies, the construction of barracks and lines on rational principles, the organisation of the supply of sufficient and wholesome food, the efficient recognition, segregation and treatment of infectious diseases, and the application of direct methods of immunising communities against infection; all these activities have their basis on the teaching of science. Broadly speaking, sanitary effort divides itself into two groups of activities, the indirect and the direct. Among the former, one classes drainage and water projects, building schemes, commissariat organisation, and the general care and treatment of the sick; while, education, segregation of the infected, and special attempts to immunise a community against infectious disease are direct or individualistic in action.

If we analyse critically the degrees of improvement in the health returns of the Indian and European armies, we find that, while both show marked improvement, there has been a much greater progress in the European army, in spite of its location in an alien land. The constantly sick-rate in both armies is but one-half of what it was fifty years ago and, if anything, the degree of progress is slightly in favour of the Indian army. The death-rate in the Indian army is now but one-third of what it was in 1863; the same rate in the European army is now but one-fifth of what it was fifty years ago. The same proportions apply to the invaliding and wastage rates, showing in both cases a definite margin of improvement in favour of the European army, or as a third is to a fifth. In malaria incidence, the degree of improvement is in favour of the Indian army, or as an eighth to a fifth; but in respect of this, the admission rates in the Indian army may be an under-statement of actual prevalence, as more malaria cases are treated out of hospital than formerly was the practice. The incidence of tuberculosis of the lungs in the European army is now but one-tenth of what it was in 1863, while the corresponding incidence in the Indian army is practically the same as it was fifty years ago. Dysentery has dropped to one-fourth in

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the Indian army and to one-ninth in the European. Non-malarial fevers, including enteric fever, and the respiratory diseases, including pneumonia, in the Indian army remain much as they were in 1863. The corresponding figures for the European army have not been put before you under exactly the same terms but, so far as they are represented respectively by enteric fever and pneumonia or comparable as between 1912 and 1863, they indicate a most definite improvement in the European army; the respiratory disease rate in that force being just one-sixth of what it was in 1863. Similarly, we have a reduction of hepatic disease in the European army to one-tenth of what it was; the corresponding figure for Indian troops being negligible. Therefore, in attempting to arrive at

	Existing rates as per- centage of 1863-4 rates.		Percentage improve- ment	
	Indian.	European.	Indian.	European.
Constantly sick rate,	43·2	46·0	56·8	54·0
Death-rate.	31·5	19·9	68·5	80·1
Invaliding rate.	27·4	19·4	72·6	80·6
Wastage rate.	29·3	19·4	70·7	80·6
Malaria rate.	12·0	18·7	88·0	81·3
Non-malaria fever rate.	100·0	10·0	<i>nil</i>	90·0
Dysentery rate.	26·0	10·6	74·0	89·4
Phthisis rate.	100·0	6·5	<i>nil</i>	90·5
Respiratory disease rate.	90·0	16·6	10·0	83·4
Hepatic disease rate.	100·0	10·0	<i>nil</i>	90·0

a comparative statement of the degrees of the improvement in two armies, in the fifty years, we can express their relative degrees in the form of the accompanying tabular statement, which gives for the ten headings the degree of improvement shown by each army, expressed as percentages. From the table it will be seen that, while the existing ratios in the European army are only about one-sixth of what they were fifty years ago, those of the Indian army are rather less than one-half of what they were in 1863. That is, the mean percentage of the existing rates in the Indian army is 56 of the 1863 rate, and the corresponding mean for the European army is 18·01 of the 1863 ratio. Similarly, the mean percentage improvement for the Indian army is 44 and as

much as 81.99 for the European army of India. In other words the fall in rates, during the fifty years, has been nearly twice as great in the European as compared with the Indian army. These statements, so far as they relate to the Indian army, are probably unduly favourable, as they are calculated on a comparison between the "all India" rates of 1912 and the Bengal rates of 1863. Could the comparison be made with the "all India" rates for 1863, the percentage of improvement in the Indian army would appear less favourable than it does.

The question suggests itself, why this difference? The answer is that, in the Indian [army, the results recorded are mainly the outcome of general or indirect sanitary effort; while, in the European army, we have the combined effect of both the indirect and direct forms of sanitary effort. In the direct or individual aspect, sanitary effort can hardly be said to exist in the Indian army. The conditions of service are peculiar, the personnel is indifferently educated and imperfectly receptive of sanitary precepts and practices. There is, moreover, a reasoned reluctance to press these precepts and practices upon a people unripe for their enforcement. Therefore, we may say that, in the Indian army, such improvement as we do find is the reflection and outcome of general sanitary effort. Malaria has diminished, in response to large drainage projects in the vicinity of cantonments or lines and to systematic cinchonisation. Cholera is less now, consequent on improved water supplies but the same sanitary effort has affected dysentery prevalence but to a small extent among Indian troops, and the non-malarial fevers, such as enteric fever, not at all. In spite of improved hutting, the incidence of respiratory diseases, pneumonia and phthisis among Indian troops is relatively unchanged in the fifty years. These negative results are peculiarly suggestive of the absence, among sepoys, of an educative standard affecting or stimulative of individual sanitary effort and, in the matter of the respiratory diseases, some laxity on the part of the administration concerning strict adherence to orders as to overcrowding.

A further feature of the Indian army figures which merits attention is the fact that, the general fall in ratios, synonymous with improvement has been very slow from 1863 to 1912. This

is typical of the operation of indirect sanitary effort, and indicates the response of a particular community to influences, not special to itself but, common to itself and others. Had those influences been direct or individualistic, their effect would have been more rapid and manifest as accentuated steps forward.

If we turn to the figures for the European army, we find evidence of a total greater progress than that presented by the Indian army, through the same fifty years. This progress is attributable to the influence of both indirect and direct sanitary effort, and it is to this latter that we owe the remarkable change of the last ten years. Glance at the figures. In every column, you see that, down to the end of 1902, there was a more or less steady general betterment as in the case of the Indian army ; but, it is not until the last decade that you find the betterment marked or striking. In the sanitary sense, down to 1902 the condition of the European army was much inferior to the Indian army. The European figures present, therefore, two phases ; one of forty years characterised, like the Indian figures, by slow gradual improvement, and one of ten years marked by rapid and impressive improvement. The former period represents the action of general or indirect sanitary effort, and the latter that of direct, special or individualistic sanitary effort. In plain language, sanitation became a real and live activity, and a policy of indifferent drifting gave place to one of interest and action.

To what can we attribute the change ? To that great blessing in disguise, the South African war, which, in more than one sphere of activity, did much to revolutionise army methods. Confining our review to the subject of sanitary effort, I ask you to realise that the South African war brought about a revolution. It broke down old and bad ideas, which regarded sanitary effort in the army to be but a medical question, and made sanitation a matter of discipline as affecting all branches and all ranks. It did more than that, by the force of public opinion which was scandalised by the ineptitudes and consequences of then existing ideas or system, it enabled the Royal Army Medical Corps to take its right place in the administrative councils of the military machine, where matters affecting the health or well-being of the European soldier are involved. The Corps itself was towed out of the back-

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water into which adverse currents had caused it to drift, and there followed a series of reforms and administrative orders which made sanitary effort a living force in the European army, and not a mere name. What these were and are every soldier knows; the key note of them all was knowledge and education, and they meant the higher technical education of the medical officer and the education of every officer and man in matters which directly concerned their well-being; the results are before you in the figures for 1912. In contrast to them, look at the figures for the forty years, 1863-1902. Those forty years were the dark age of sanitary effort in the European army. Not because there were no men in the medical service who realised what was wrong, or knew on what lines of reform the remedy lay; but, simply and solely, because those men were unable to make their voices heard by men who would not hear, and because they could not escape from the vicious circle to which their activities were confined. In that black period of forty years, we find the maxima under every item or heading discussed. There is not a redeeming feature and, perhaps, the least creditable years were those from 1883 to 1902; I say least creditable because in that period the light of modern knowledge was burning brightly outside the army, but its rays were not allowed to fall into the dark places of the military machine. One need not dwell further on the why and wherefore; it is sufficient that the screen was torn aside after the South African war, and a brighter era inaugurated.

Now, in that brighter era which has existed since 1902, what have we to show? A constantly sick rate fallen from 74 to 29, a death-rate down from 15 to less than 5, an invaliding rate of 6 instead of 36, a total wastage rate down from 51 to 11, and every disease ratio reduced in proportion. Among them all, stands out an enteric fever rate of 20 reduced to 2, and a mortality rate, therefrom, fallen from 5.6 to 0.4; or, in actual cases, an annual toll of 1313 attacks with 354 deaths reduced to 182 cases with 28 deaths. How and why this remarkable change? simply, by the application of direct sanitary effort, based on scientific teaching and methods. There is no mystery about it and, now the task is accomplished, one can but wonder that it took so long to materialise. The first step was the making of sanitary effort a matter

of discipline; the second was the education of the officer and man as to what was the nature and aim of sanitary effort, and the futility of any such efforts unless a serious part of the daily acts of all and not merely of the few. To the ground, thus prepared, then followed the application of methods indicated by advanced medical opinion. The first of these was inoculation against enteric fever. A procedure which sprang from the Army Medical School at Netley, fostered and developed by the Royal Army Medical Corps in the face of every difficulty, now bears fruit undreamt of in 1902 by even its most ardent advocates, and is imitated and practised in both the French and United States armies. In the latter, it is compulsory.

On an organised basis, the inoculation of European troops against enteric fever dates from 1906. In that year we had some 5 per cent inoculated, in 1907 the numbers had risen to 15 per cent, in 1908 to 30 per cent., in 1909 to 50 cent., in 1910 to 70 per cent. in 1911 to 85 per cent. and in 1912 to 90 per cent. From the census return taken on December 31st 1912, we find the rank and file population to consist of 62005 inoculated, 5174 not inoculated, and 1,653 men who had had enteric fever at some time or other. Inoculation is entirely a voluntary procedure in the army, and the fact that over ninety per cent of the men are so protected is eloquent testimony to the intelligent attitude taken by the men towards the procedure, and to the tact and zeal with which its merits have been represented to the men by officers of the Royal Army Medical Corps. The influence of inoculation on enteric fever incidence and mortality is shown by the following figures for 1912. Among the inoculated we had 141 cases and twelve deaths, equivalent to an admission rate of 2.17 per thousand, death-rate of 0.43 per thousand and a case mortality rate of 8.5 per cent. Among the non-inoculated there were 40 cases with sixteen deaths, equivalent to an admission rate of 6.48 per mille, a death-rate of 2.7 per mile, and a case mortality rate of 39 per cent. These facts indicate clearly the influence of inoculation in lowering the incidence of enteric fever, and very emphatically lowering the case mortality.

While we, rightly, attach much importance to the value and influence of inoculation in reducing both incidence and mortality from enteric fever, we owe probably much of our recent successful control of this disease and also of the cognate infection known as paratyphoid fever to the two enteric depots at Naini Tal and Wellington. These depots were formed in 1908-9, and to them are sent all cases convalescent from enteric fever and any other form of pyrexia suggestive of being of an infectious nature. At the depots, which are provided with laboratories and a highly technically trained staff, these convalescent cases are submitted to repeated technical examinations and detained until they are free from potential infection. Endowed with these functions, the depots have received 1562 enteric convalescents and over a thousand others convalescent from other suspicious types of fever. Out of the 1562 enteric convalescents, fifty four carriers of infection have been detected and of these carriers no less than eighteen were of the chronic type, that is unamenable to any known form of treatment. These facts show the presence among this class of convalescent of practically four per cent of persons who are potentially infective for varying periods of time. In that these unconscious carriers of infection are capable of and actually do infect others with whom they associate, it is manifest that their early detection and detention under safe conditions is a matter of high sanitary policy. Had the old system prevailed, and these depots not existed, then these 54 carriers of enteric infection would have gone back to barracks at once on discharge from hospital. The aftermath of fresh cases from those 54 men, in the course of a few months, would have amounted to many hundreds of cases and consequent deaths. From this point of view, the maintenance of the enteric depots and the elaborate technique there carried out for the detection of potentially infective individuals is a manifestation of sanitary effort of the first importance. Great and dominant as have been the influence of both inoculation and the depots in reducing the prevalence of enteric fever among European troops, they have been supplemented by other aspects of sanitary effort; among the more important of these are, the greater interest taken by officers and men in sanitary detail, the higher standard of clean-



liness in barracks and lines, the greater security as to the hygienic quality of milk and butter, issued to the men following the development of military dairies, and the adoption of sound conservancy methods as evidenced by a wet system of latrine management and incineration, both of which are advances on previous practices. It is curious to be able to say that, as far back as 1885, I advocated both measures only to be laughed at as a visionary. Only one man ever grasped the true meaning of my ideas in those days, and that man was Colonel G. Young, afterwards D. Q. M. G. at Army Headquarters. We have lived to see our views take shape only some twenty five years later.

The reverse side of the picture as to the reduction of enteric fever among European troops, is presented by the undue prevalence of the disease among both officers and women, who present an incidence rate from two to three times as great as prevails among the men. In neither of these classes is inoculation existent to the extent found among the men, and to neither of these classes is the system of the enteric depots applied. If enteric prevalence is ever to be reduced to the same level of incidence in these two classes as holds good for the rank and file, inoculation must be pressed and both must be admitted to the system of segregation on convalescence in the depots. That they are not admitted to the enteric depots is due to the refusal of the Administration to accept the strongest recommendations from the Medical Branch that they should be so admitted.

There remains, now, little more to be said except it be to anticipate the future. The present is undoubtedly most satisfactory as to the effect of sanitary effort among European troops among whom, if we except certain aspects of the health of officers and the women, sanitary effort has not been in vain. Whether the advantage gained is to be held depends entirely upon how much the lessons of the past are remembered. There are not wanting signs of a reaction; and, because men do not see four and five funerals a week in their garrisons as used to be the average, there is a tendency to think that a slackening of principles and practices will mean no penalty to be paid. On that point, I have no hesitation in saying what I think. Though the effects of his presence are little evident, yet the

enemy of disease and death is still with us, and any slackening of sanitary effort cannot fail to bring us back to the old conditions. This is an age of scientific knowledge and, as interpreters of scientific advance where those advances have a bearing on health problems, the dicta of the Medical Corps should ever have dominance. To sacrifice them ever on the altar of expediency or finance can lead only to disaster ultimately. New conditions and new diseases are coming into view. To cope with them, the medical officers of the army need to be afforded facilities and means of technical research, be it for prevention or cure. Each year shows that the dispensary is giving way to the laboratory, and if the army is going to keep its own house in order it must, in these details, be abreast of the times. Therefore, if sanitary effort is to be maintained at its present high level in the European army, it can be assured only of that place by no slackening of existing practices, by the extended application of scientific methods, and by giving the fullest scope and encouragement for the practical interpretation of the teachings of science by the officers of the Medical Corps, who, from the very nature of things, are the legitimate exponents of the advance of science in all things that pertain to disease.

It may be argued, and is argued by some, that there comes a point at which the measures advocated by the Medical Corps, for the prevention of sickness, wastage and death, are not economically sound. The ethics of that view appear indefensible and merit no argument but, as a matter of £. s. d., it may be interesting to remind you that a Commission, appointed by the Secretary of State for War in 1900, made an attempt to estimate the monetary loss to the State from disease in the army during the South African War. On the basis of the cheapest trained soldier being worth not less than £40, the Commission considered that each one soldier who dies and has to be replaced costs the State £87; each one attacked by disease and who rejoins his regiment within four months involves a loss of £57; and each soldier attacked, invalided home and replaced by a fit substitute costs the State no less than £108. Now, assuming that a soldier puts in one year in this country, then, after paying initial and recurring maintenance charges, each European private cannot have cost or

be worth to the Indian Government less than £100. As nine-tenths of the men who die in or are invalided out of this country have completed one year's service in India, the monetary value of the wastage from the European army, in 1898, was not less £390,700 or fifty eight lakhs of rupees. Ten years ago, the wastage had a money value of forty five lakhs on the same basis of calculation. In 1912, that same wastage of 802 men represented but £80,200 or roughly twelve lakhs. Setting aside all question of altruism, it seems to me that the reduction of a money loss to the State from sickness and death, in ten years, from forty five to twelve lakhs of rupees is ample, if sordid, justification for sanitary effort in the European army only. I make no attempt to express the monetary value of the total gain by sanitary effort in the two armies, during the past fifty years.

Of the results as we find them to exist now in the purely Indian army, it may be said they are good. Personally, I think they should be better and that a death-rate of 4·6 in an indigenous army, living in its cantonments, is too high; it should not be over 2·5 in peace times, but one can easily be too critical in these matters. Enteric fever, dysentery phthisis and pneumonia all exist to a greater extent than they should exist among Indian troops. Good as are the present figures, when compared with the past, still one cannot disguise the fact that, whatever progress has been made, the results have taken fifty years or nearly two generations to attain. Moreover, the progress made has been entirely from indirect causes and in spite of the Indian soldier himself. In the true and active sense sanitary effort cannot be said to exist among Indian troops, and it is difficult to see how it can be made to evolve except by education working through time. "Slow but sure" is a good maxim and, perhaps, nowhere more applicable than to the Indian soldier; but, even so we must see that it is not he, but ourselves, who set the pace. The sepoy is but a typical representative of the community from which he is recruited, and he brings with him into his barracks and lines the ideas and habits of his village and home. Except at grave risk, any forcible dislocation of these ingrained ideas and habits, during the period of military

service, are not to be contemplated. Therefore, we must take the Indian soldier as we find him, trusting to indirect sanitary measures to modify and reduce to a minimum the evil results associated with prejudices and practices. Experience has shown that, in spite of the advantages which a disciplined and corporate life give, the term of military service makes no impression on and teaches apparently no lesson to the sepoy, as regards his sanitary ideals, and he returns to his village quite content to accept the conditions of domestic life and adhere to the ways of his forefathers in which he was brought up. In this matter, therefore the work of the military administration is dependent on the efforts of the civil administration to level up the sanitary standard of ideas and practices of the masses from whom we are dependent for our recruits. Until that sanitary education is secured among the classes from which the army is recruited, and they themselves are imbued with and evince a desire for a higher hygienic standard, further progress in respect of sanitary effort, among Indian troops, is likely to be small.

To the official civilian, who may have listened to what I have had to say or, perhaps, may read these pages, one would affirm that our experiences in the army of India offer definite encouragement to those attempting to develop sanitary effort among the masses of this country. One has shown how, in spite of advantages associated with discipline and a corporate life, progress, though real, has been very slow among Indian troops. The sepoy is typical of the community from which he enlists to be a soldier; therefore, if our difficulties have been great to raise his sanitary condition, yours with his undisciplined brother will be far greater. Your true encouragement lies in the results we have obtained among European troops in India. Brilliant as those results are, you must not lose sight of the fact that for forty years, out of the last half century, we made little progress; in truth, at one time, we actually retrogressed. Those forty years of failure to advance synchronise with a period of sanitary ignorance and apathy among all ranks of the European army, and, it was not until the wave or movement of health culture spread over England itself and made itself felt among the masses at home from which we draw our

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European recruits, that the measures which commended themselves to and were advocated by the enlightened had any chance of success.. You, in respect of the masses of India, are in a like case. With you, in your efforts, as with us in ours, the only hope of success lies in education and building up of a higher standard of hygienic conceptions among the people. This is familiar to you and all interested in the question, but pardon me for reiterating, that the prime need of India is the diffusion of simple elementary knowledge among the masses; more especially knowledge concerning man himself and that disease is in the majority of cases, associated with conditions remediable by man's own efforts. Until that knowledge is general and carried into the home it seems to me to be futile to elaborate highly technical forms of attack upon disease among Indians. They are not, intellectually, fitted to profit by such measures and their impressment on the people against their wishes will probably do more harm than good. In this diffusion of knowledge and efforts to reach the home, thereby influencing the next generation at its most susceptible time, I venture to suggest that your best agent will be woman and that your wiser policy will be to flood the country with women doctors or other females capable of spreading simple but practical knowledge as to domestic hygiene, rather than spending vast sums of money on the erection of elaborate hospitals and other institutions which touch and benefit but the few. If you, further, support these sanitary missionaries with travelling dispensaries, the final results cannot fail to be other than good. We must not overlook the fact that much of existing mal-sanitation among the Indian masses is intimately associated with their economic condition, therefore, too much must not be expected unless education efforts are supplemented by provincial or municipal schemes for betterment of congested areas and villages. Another need in India, towards the same ends, is the stimulation of a greater interest in these matters among the wealthier classes who, by example and philanthropic expenditure, could do much for their own country as was done by the corresponding class in our own. In India, sanitary effort to be a live force, must begin from the top and not from the bottom of the social scale ; we had to do that in our own land, and the same activity is called for in this.

It has been shown how, even in the European army, until education paved the way our progress was little for forty years. You will need, probably, twice forty years to make any great headway among the masses of India but, in proportion as our reward in the last ten years has been worth the struggle, so will yours be. Any measure of success on your part, among the many, cannot fail to be an aid to us among the relatively few. Conversely, any success as to sanitary effort in the Indian army should, through the agency of discharged sepoy, operate as a leaven among the masses. In this matter, therefore, the work of the soldier and the civilian are complementary.

*Surgeon-General Sloggett*:—"Does any lady or gentleman wish to make any remarks, or ask Colonel Firth any questions?"

Capt. Crofton said:—"Your Excellency, ladies and gentlemen, as a regimental officer who has just had a hot weather in the plains, I should like to say a few words on the subject of what the lecturer said about married families. In the station I am in there is a special hospital for the married families, and as you probably all know, if any woman gets sick or any of the children are sick, she and the whole of her family have to go to hospital. And there, no matter how ill she is, she is not isolated unless it is an infectious case. The nursing sisters in this country have nothing to do with the married people; there is only one matron, who is often an Eurasian, to run the whole place, and I think, looking at it from the point of view of the regimental officer who has to look after the families of his men as well as the men themselves, that that has a good deal to say to the extraordinarily high rate of sickness and mortality amongst the married people."

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*Surgeon-General Sloggett*:—"Your Excellency, ladies and gentlemen, you have heard what has just been said to-day. I cordially agree, but it is purely and simply a question of money. For many years we have been trying to better the lot of the women and children and improve their hospitals, and if we can get the money out of the Indian Government we shall be able to do

so, but I am afraid, until those days come, we shall have to rely on voluntary aid. The whole question of the nursing in the female hospitals of the British Army (of course I am speaking of the British Army now) is a subject which is under discussion and which is in the melting pot, and I hope, before very long, we shall get some good results, but it is purely and simply a question of finance.

"Now if nobody else has anything to say, I propose a vote of thanks to Colonel Firth for his most admirable and scientific lecture."

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## ***The Royal Indian Marine.***

*A History of the Government Sea Service in India from the earliest time.*

By **Commander E. J. HEADLAM, R.I.M., F.R.G.S., F.R. MET. SOC.**

The Indian Marine Service has been known by various titles since its inception in 1612, when the Hon East India Co., found that it was necessary to provide themselves with armed vessels to cope with the depredations of the Dutch and Portuguese, and the Pirates on the Indian Coasts. Thus from 1612 to 1686 the Force was known as the Hon East India Company's Marine, from 1686 to 1830 as the Bombay Marine, from 1830 to 1863 as the Indian Navy, and from 1863 to 1877 again as the Bombay Marine. In 1877 the title was altered to Her Majesty's Indian Marine which lasted until 1892, when the present designation of the Royal Indian Marine was finally adopted.

In the latter part of the year 1611 it became clear to the Directors of the East India Company, that if they wished to continue and develop their trade in India, they must be prepared to meet force by force and maintain armed vessels to cope with the Dutch and Portuguese, and with the Pirates which in those days infested the coasts of India. Early in 1612 they therefore despatched two ships the "Dragon" and "Hoseander" afterwards joined by the "James" and "Solomon," and the command was given to Captain Thomas Best, who sailing on the 1st of February arrived in Surat roadstead on the 5th of September. The first action was fought with the Portuguese, who appeared off Surat with a fleet of 4 galleons and more than twenty armed vessels. Captain Best in the "Dragon" at once assumed the offensive, and engaged the flagship, and after 3 days' fighting gained a signal victory and drove "three of their four ships aground on the sands thwart of the Barre of Surat." For 3 years Captain Best with his small squadron. was engaged in almost continuous warfare, and with such success that they culminated in a grant by the Emperor Jahangir to the East India Company



of a Firman, authorizing the English to trade within his dominions.

In 1615 the total strength of the Marine Force appears to have consisted of 10 grabs and gallivats, all armed, and this force formed the nucleus of the Bombay Marine. The Grab was a three masted square rigged vessel with a high stern and low forecastle, the Gallivats or Galleywats, according to Clement Downings "History of the Indian Wars", "sail with a peak sail like the mizen of any of our ships of war, and row with 30 or 40 oars, very few with less than 20 oars. Their complement is generally 20 fighting men, besides the rowers; but they are fit for no other service." In this year Sir Thomas Roe came out from England as Ambassador from King James to the Great Mogul, and he strongly advised the Company to pin their faith to a sea service rather than to the erection of forts and the maintenance of a large number of troops. In a letter to the Company he says "By my consent you will never engage yourselves but at sea, where you are likely to gain as often as to lose." In the year which followed and up to 1668 the Marine was engaged in a practically continuous and on the whole successful struggle with the Company's foes, along the Indian Coast and also in the Persian Gulf.

In 1668 when the East India Company took over Bombay from the Crown, Captain Young of the Marine was appointed as Deputy Governor. But unfortunately for the credit of the young service he had finally to be removed from his post for gross misconduct. The following year witnessed a further development of the Marine, the trade of Bombay had been so much harrassed by the Malabar and Sevajee Pirates that it became necessary to build some small armed craft for the defence of the merchant vessels trading with the ports of the Persian Gulf and Arabian Sea. Among other vessels two small brigantines are recorded as having been built by Mr. Warwick Pett, who was a descendant of Sir Phineas Pett, the famous shipwright of Elizabeth's reign, and who had been despatched to Bombay for this purpose with a full supply of Marine stores and equipment for ship building. The construction of these ships at Bombay about 1670 may be regarded as the earliest step towards the withdrawal of the Marine from Surat to Bombay, which lent the name

by which it was distinguished for over two hundred years, and which to the present day serves as its headquarters.

In the famous mutiny of 1683 the Marine played a conspicuous part, the Officers and Crews of the "Revenge" and the "Hunter" both throwing in their lot with Captain Keigwin and the mutineers, and the crews of the Company's ships, which accompanied Mr. Child in the mission from Surat refusing to act against the mutineers. Captain Alderton of the "Hunter" was one of the four ringleaders, to whom a pardon was not granted under the Royal Commission of August 24. 1684. Against this regrettable instance may be set off the fact that the final surrender of the rebels and the Island of Bombay was obtained by Sir Robert Grantham, \* an Officer of the Company's Marine, who afterwards took Captain Keigwin to England on board the "Charles II." Under the Royal Commission before mentioned Mr. (afterwards Sir John Child) was appointed by the King's patent Captain General and Admiral of the Company's sea and land forces between Cape Comorin and the Gulf of Persia, with Sir Thomas Grantham as Vice-Admiral, and the Senior Captain of the Company's ship as Rear Admiral, the three thus becoming the earliest official heads of the Indian Marine Service. In the following year (1684) Sir John Wyborne was appointed Vice-Admiral and Deputy Governor of Bombay; and in 1686 the seat of the Company's Government was transferred from Surat to Bombay, the Marine stores being located in the Castle, and the Company's ship being anchored in Bombay Harbour.

During the latter part of the 17th century the Marine suffered considerably during the wave of sickness that swept over Bombay. And during the years through which Sir John Child was administering in Bombay much dissatisfaction was felt through the considerable reductions, which were made in the Marine and Military establishments, rendering them unfit to cope with the enemies of their country, and this despite the fact that urgent demands were constantly being made for reinforcements and for "Either a supply of seamen, or power to impress them for

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\* Bruce's annals Vol. I, p. 541.

the ships." \* These and other minor causes of dissatisfaction lead to frequent desertions from the ships, and on August 14th 1694 the Bombay Government issued these orders to Lieutenant James Hammer.† "There be run away from this Island in the Ruby Frigate boat, sundry persons belonging to the shipping in the road, these are to enorder you to make strict inquiry after them, and if on this Island surprise them. Send to the Subhedar of Warli to know if the boat has been seen off that place. They are all armed so that you must be cautious. If you hear anything of them, advise thereunto."

Soon after the transfer of the seat of Government from Surat to Bombay matters began to improve and the Marine forces became officially known as the Bombay Marine. An Officer was regularly appointed each year as Admiral, and the supply of Officers and men was kept up by drafts from the ships arriving from Europe.‡ These arrangements had become absolutely necessary if the Island was to be protected against the attacks of the pirates, and to make headway against the superior maritime forces of the French, Dutch and Portuguese. According to Hamiltons's "New account of the East Indies", the Arabian fleet, which preyed upon the coast of India from the Red Sea to Cape Comorin, consisted in 1715 of one ship of 74 guns, two of 60, one of 50 and 18 small ships from 32 to 12 guns each, and some "trankies" or rowing vessels of from 4 to 8 guns each, against which the Bombay Marine at the time consisted of one ship of 32 guns. 4 grab ships mounting from 20 to 28 guns and 20 grabs and gallivats, carrying from 5 to 12 guns, the total cost being £. 51,700.

The first important action fought by the Bombay Marine was an unsuccessful attempt to capture the Castle Gheriah, the stronghold of the notorious pirate Angria, due to the capture by Angria's cruisers of the ship "Success" flying British colours. In April 1717 the whole fleet sailed from Bombay under Commodore Berlew, but after several days continuous fighting the

\* Bruce's annals Vol. III p. p. 949-50.

† Sec. out. L. B. 5 of 1694-96-7-8.

‡ Low's. His. of Indian Navy p. p. 90.

fortress proved impregnable and they were obliged to return to Bombay. On the 5th of November 1718 the Marine laid siege to Kenery, the squadron being under the command of Manuel de Castro a Portuguese, whom the President, to the intense chagrin of the English Officers had appointed Admiral of the fleet. So short of men were the ships that the President endeavoured to obtain volunteers, promising that the widows and children of any who lost their lives should receive respectively £30 and £10 each. The attack however failed, and it was in consequence of this ill success that the President decided to add to the fleet "a floating castle or a machine that should be almost cannon-proof." This vessel "was pretty flat, flowed with little or no bilge and but six foot hold. The thickness of her sides was made by the nicest composition cannon-proof. She was to go with one mast and a top sail which was rigged in a very commodious manner, and mounted 12 guns carrying 48 poundsers."\* The vessel however proved a failure and was destroyed as useless after a very short life.

In 1772 the Bombay Marine made a joint expedition with the Portuguese against Alibag, the latter providing the land forces, the marine force consisting of 3 ships under Commodore Mathews. A contemporary writer, Clement Downing, a Lieutenant in the Bombay Marine remarks that "the Viceroy of Goa with much pretended zeal came in person, designing to head such forces as he had raised, and the General of the North also came down to Bombay and was most magnificently entertained by the President." But on the day of the attack "The Viceroy of Goa went on board the ship, pretending that he was very ill. The Commodore sent his own doctor to offer his services and supply him with such medicine as should be convenient for him, if he was really ill. But the doctor returned and reported to the Commodore that he did not perceive anything to be the matter with him." This cowardice on the part of the Viceroy seems to have affected the troops, for the attack, though well timed, failed, owing to the cowardice, and some say treachery of the Portuguese. The only satisfactory feature of the engagement was the conduct of the Officers and men of the Bombay

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\* History of Indian Wars 1737. Clement Downing.

Marine, who behaved with the greatest bravery losing many killed and wounded. Clement Downing writes that after the failure of the attack "The Commodore came on shore in a violent rage, flew at the General of the North and thrust his cane in his mouth, and treated the Viceroy not much better."

At this time the English trade was suffering much from the depredations of the Sanganian rovers, whose chief sea-port was Beyt, at the entrance of the Gulf of Cutch, an attempt was made by them to capture the "Morning Star," a Company's ship, which according to Hamilton "lead to one of the severest of the naval contests, which has been waged on the Western Coast of India." The "Morning Star" which besides its native crew had only 17 European fighting men on board, was way-laid by 8 ships, the largest being of nearly 500 tons, and though the English Commodore was wounded by a lance in the thigh early in the engagement, they succeeded after 5 hours fighting in beating off the enemy and escaping. During this period the desertions amongst the European seamen in the Marine again became so frequent that in 1724 an order was passed that the seamen should be kept two months in arrears of pay, with the hope that this might act as a preventative. The cause of the numerous desertions seems chiefly to have been the discomfort, arduous life, bad food and small pay on board the ships, as compared to the remunerative posts and greater comforts, so easily obtained on shore. This state of affairs was the more serious in that at this time, the Island of Bombay was being constantly menaced by the native pirates called by the English Sevajees, Kempsaunst, Malwans and Coolies. The Bombay Council therefore to enhance the value of the Marine, made representations to the Court of Directors, who approved of a scheme for pensions for the widows of Officers and seamen who had performed distinguished service, large numbers of seamen were drafted from their trading vessels to the men of war and the "Rose" galley was purchased for Rs. 14,001-2-14.

In 1734 an expedition under Captain Redford Lunn with the sloop "London," a bombketch and 5 gallivats made a successful raid against the coolie rovers of the Guzerat coast, whose stronghold was Sultanpore on the River Carla. The expedi-

tion returned having captured 14 and burnt 5 vessels with a loss of only two Europeans and two Natives, the pirates themselves burning 50 small vessels to prevent them falling into the hands of the English. Shortly after this however the pilot of the Gallivat "Antilope" of the Bombay Marine, escorting a rich convoy of merchant vessels to Cambay, who was a spy in the pay of the pirates, steered the fleet through a wrong channel, where they took the ground and were immediately surrounded by an overwhelming force, and after a gallant resistance succumbed, only two Europeans surviving.

In 1735 Lavji Nusserwanji Wadia, the Company's Parsi shipbuilder was brought to Bombay, and he selected the present site for the Government Dockyard, the site was then occupied by Marine Officers' Quarters, a Jail and Public Thoroughfare. In this year the Bombay Marine consisted of the "Victoria" (Frigate,) The "Neptune" (Grab), the "Prince of Wales," "King George," "Princess Caroline" and "Rose" (Galleys), the Salamander (Bomb Ketch) and several Gallivats and boats at an annual cost of Rs. 181,067. In 1737 Commodore Bagnell was appointed Commodore of all the marine forces in the Bombay Presidency by the President's Commission, bearing date July 6th 1737\* and in the following year on the 22nd of December he inflicted a severe defeat on Sambajee's fleet at the mouth of Rajapore river; the defeat of the pirates would have been far more decisive, had the enemy not succeeded in entering the river and running into shallow water, where it was impossible for Commodore Bagnell to follow them. In the following year (1739) Captain Inchbird of the Bombay Marine, who had been despatched on a special mission, succeeded after considerable difficulties in negotiating a treaty in the name of President Law, with the victorious Mahratta General, Chimnaji Appa, who acted on the part of the Peishwa, according to this treaty, the Peishwa conceded to the English free trade in his dominions. The contracting parties mutually engaged that debtors endeavouring to evade their responsibilities, should be either delivered up or compelled to pay all that was due: that runaway slaves should be

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\* Pub. Diary II of 1737—221-22.

seized and restored to their masters, and that if the vessels of one power should be driven by stress of weather into the ports of the other, assistance should be rendered them; but such vessels as we wrecked on the coast should be sold, one half the proceeds of sale being paid to the owner, the other half to the Government on whose coast the wreck might be thrown.

In the same year on the 9th of November a terrific storm swept over the coast, and three of the finest grabs in the Marine commanded by Captain Rigby, Sandilands and Munn were lost with all hands. Instantly Sambhajee Angria seized the opportunity and sallied forth doing much damage to the fishing boats at the mouth of the harbour. Remonstrances were made in vain and the Marine thus reduced was unable to retaliate. This seems to have awakened the authorities to the gravity of the situation for during the years 1739-41 several additions were made to the fleet, amongst others two grabs, 90 feet long by the keel, 30 feet by the beam, and 12 feet 8 inches in the hold to carry 20 guns (10 in a line) besides her prow guns. One sea going ship 90 feet by the keel, 30 feet by the beam and  $14\frac{1}{2}$  feet in the hold, to carry 11 guns in a line. Thus by 1741 the strength of the Marine consisted of one ship of 44 guns, 4 ships of 28 guns, 4 of 18 guns and 20 large gallivats, employing nearly 100 Officers and from 1700 to 2000 men and when the Commodore inspected the whole fleet on the 8th of October he was able to report "that having in person repaired on board the several vessels, he thinks them entirely clear and in a proper posture for defence, nor does he apprehend they are to be rendered better." \*

The year 1742, being a year of peace and generally free from even rumours of wars, the Bombay Council, most prematurely decided on an immediate reduction of the Marine establishment. The post of Admiral was abolished and the number of Officers in the reduced establishment consisted of one Superintendent, eight Commanders, one of whom was styled Commodore, three first Lieutenants, Four Second Lieutenants, Four third Officers and six masters of Gallivats, besides Midship-

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\* Bom. Gov, Diary Oct. 8-1741 Pub. Diary 14 of 1740-1-401.

men whose numbers do not appear. The immediate result of the reduction was that the Mercantile Fleet, now larger than ever, suffered most serious losses at the hands of the pirates, while in 1744 after the outbreak of war between England and France, two French Privateers, The "Apollo" of 50 guns and the "Anglesea" of 40 guns, after capturing the British ship "Princess Mary" from Madras, hovered off the port of Bombay, hoping to intercept the East Indiamen as they arrived from England; the only protective measures, which the Government of Bombay could adopt was to equip for sea three of their ships of war of greatly inferior force, and despatch six fishing boats to give the alarm to any English vessel, approaching the shores of India. \*

The dissatisfactions at the recent reductions in the Marine together with the drafting of men from East Indiamen, often against their will, to fill vacancies in the ships of war, culminated in 1748 in a mutiny on board the Marine ship "Bombay" (Captain Samuel Hough,) whilst at anchor off Rajapore. The mutineers attacked the Captain and Officers while they were at supper, and after considerable resistance overcome them and placed them under an armed guard. The mutineers were however entirely ignorant of pilotage or navigation, and having very nearly wrecked the ship on a lee-shore, they finally listened to the arguments of the Captain and Officers and returned to duty on the Captain promising to obtain for them a free pardon, a grant of Rs. 2,000 and a free passage to England. The Government carried out all Captain Hough's promises and all were pardoned with exception of Surgeon William Wills and four seaman. The former convicted by a Court Martial of exciting disaffection, was exhibited to all the ships with a halter round his neck, and after having his crime and sentence read aloud was finally hanged, the four sea men were subjected to a public flogging.† During the years 1750-56 the constant representations of the merchants of the defencelessness of the trade routes began to have effect, and some considerable additions to the fleet were purchased

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\* Hist. of I. N. Low p. p. 117-120 Bom Quar. Rer. p. p. 267-68.

† The Mutiny Act was made applicable by Royal Warrant to the Company's Military and Naval Forces in India, on 25th March 1754.



or built; the first dry dock, now the upper old Bombay dock was completed in 1751. In the same year Captain James while conveying a valuable fleet of 70 coasters from Bombay, fell in with Angria's fleet of 16 grabs and gallivats, Captain James after a two hours' fight succeeded in defeating the pirates and saving his convoy, and on his return to Bombay was appointed Commodore and Commander-in-Chief of the Bombay Marine.

In 1754 the strength of the Marine was as shown in the following statement:—

Vessels.	Tonnage.	Europeans Officers and Men.	Christian Topases.	Lascars or Country Sailors.	Soldiers.	Total Com- plement.	Arma- ment.	
							Guns.	Pdrs.
New Cruiser (100) ...	...	100	20	40	40	200	20	12
"Bombay" grab ...	363	80	16	34	31	161	18	9
"Guarjan" shid ...	345	80	16	34	31	161	20	9
New Cruiser ...	...	80	16	34	31	161	18	9
"Drake" ketch ...	220	40	10	24	20	94	14	6
"Defence" " ...	70	16	10	16	18	60	12	4
"Despatch" sloop ...	65	16	6	14	18	54	12	4
"Contents" , ...	50	8	6	14	18	46	8	4
"Shark" gallivat ...	38	6	6	20	16	48	1	3
"Dolphin" " ...	37	6	6	20	11	48	6	2
"Swift" " ...	15	2	...	14	11	27	1	1
One new " ...	20	2	2	16	21	31	4	2
" " " ...	20	2	2	16	11	31	1	2
6 small " to be built.	20	2	2	16	21	31	1	2
							4	1

At the commencement of 1756 a Royal Squadron under Vice-Admiral Watson, visited Bombay for the first time since the Island had become the property of the Company. Taking advantage of this circumstance, it was decided to despatch a combined Naval and Military expedition against Vijayadurg, the stronghold of the pirate Tulaji Angria, who had for so long resisted all attacks. It was determined to attack Gheriah the

capital of his dominions, and the principal harbour and arsenal of his marine force; but says Orme, "it was long since any Englishmen had seen this place, that, trusting to the report of the natives, they believed it to be as strong as Gibraltar, and like that, situated on a mountain inaccessible from the sea." Previous to the departure of the expedition Commodore James with three of the Company's ship sailed for Gheriah to take soundings, and make a reconnaissance and report on the best method of approach and attack; the following is a copy of his report addressed to Admiral Watson, dated, "December 22 1755, on board the 'Protector' off Bombay."

Sir,

"I have the honour to inform you that I arrived off Gheriah, with the "Protector", "Revenge" and "Guardian" under my command, on the morning of the 14th inst.;, where I saw the enemy's fleet consisting of three threemasted grabs, eight Ketches, and twelve or fourteen gallivats in the harbour, rigged and their sails bent, with one three mast grab having only her lower masts rigged. I stood into seven fathoms water, when I think I was in point blank shot of the fort, but they did not fire at us. I was exceedingly surprised at finding the place so widely different from what I had heard it represented. I assure you, Sir, it is not to be called high nor in my opinion strong; it is indeed, a large mass of buildings, and I believe the walls may be thick, but that part of the works which fell under my observation, and which was three quarters of their circumference is quite irregular, with round towers and long curtains in the eastern manner and which discovers only thirty-two embrasures below, and fifteen above. On the west side of the harbour is a fine flat table-land opposite the fort, and I think within gun-shot, but I am sure within distance for bombarding, and from whence a very good diversion might be made, while the principal attack is carried on by the ships, or from a hill to the southward of the fort. The hill is very near to and fully as high as the fort, for when we were at a considerable distance it hid all the fort except the top of one house and the flagstaff; it is also very plain from our depth of water that the ships can go near enough for battering and consequently for throwing shells. There are also three sandy bays under the hill, without

any surf to render the landing difficult; the first two are rather too near the fort ; but the third is out of their line of fire. The water is deep enough for the ships to cover the descent, and the hill accessible as to make the getting up of cannon etc., quite easy afterwards. There is a very large town betwixt the fort and this hill, the houses of which are covered with cajans, and which the inhabitants will undoubtedly abandon and destroy upon our landing, and then fly to the fort as at my attack at Sevendroog, in which case great numbers must be killed by the shells, the place being so crowded and populous that they cannot fall amiss, and many upper buildings must of course be knocked down, which will cause great disorder and confusion. They sent out no boats while I was off the place, and to deceive them I caused all the sails to be furled a little before dark, and made the signal to anchor, after which I ran out of sight in the night, so that they are ignorant whether I proceeded to the northward or to the southward. Several of the gallivats had blue or green and white pennants like Portuguese at their mast heads, and one of them had a white flag with a red cross in the middle, which they hauled down when I drew near. Nothing remarkable has happened during this cruise; the Mahratta fleet was at Sevendroog on my going down and coming up. I shall be happy to wait on you to relate further particulars."

On the 7th of February the combined Naval and Military expedition sailed from Bombay. The Naval Forces consisted of H. M. S. "Kent" 75 guns, Flag-ship of Vice-Admiral Watson, commanding the expedition, His Majesty's ships "Cumberland" 66 guns, Flag-ship of Rear Admiral Pocock, "Tiger" 60 guns, "Salisbury" 50 guns, "Bridgewater" 20 guns and "Kingfisher" 16 guns. The squadron of the Bombay Marine consisted of the "Protector" 44 guns, (Commodore James) "Revenge" 28 guns, "Bombay" 28 guns, "Guardian" 28 guns, "Swallow" 16 guns, "Drake," "Viper," "Triumph," "Warora" and "Despatch Bomb" vessels, on board of which a company of Artillery under Captain Torey was embarked. The Military force consisted of 800 European soldiers, 300 Topasses 300 sepoys under Colonel (afterwards Lord) Clive. The attack commenced on the 12th of February having been

precipitated so as to exclude the Mahrattas against whom suspicions were entertained that they were acting in concert with Angria. The fleet stood in two divisions, the first of which consisted of the ships of the Line and the "Protector" attacking the fort, the second consisting of the smaller vessels attacking Angria's fleet and dockyards. The pirate fleet having been burnt, the Admiral landed Clive with the military forces to co-operate from the land side. After three days the attack proved successful and the fort surrendered, a large quantity of stores, cannon ammunition and specie falling into the hands of the victors. The enemy's fleet which had been destroyed consisted of one ship of 74 guns, two 60 guns ships on the stocks, eight grabs mounting from 20 to 30 guns each, and about 60 gallivats.

The disappearance of Angria from the arena of external politics led to a proposal again to reduce the Marine, the proposal came from the Marine Superintendent, Captain Samuel Hough, who submitted to the Government that "as we have been so successful as to burn all Tulaji Angria's fleet, and have taken all his forts from him, so that he is entirely destroyed, I beg leave to recommend to your Honour's consideration the reducing of the marine expenses." This the Bombay Government declined to do, owing to the fact that war had broken out between France and England, they however urged on the Superintendent the necessity of exercising the greatest economy.\* Soon after the out-break of war, Commodore James while cruising in the "Revenge" 28 guns, captured the French ship "Indinne" carrying 6 more guns and having a crew one-third larger. In the same year in the middle of the monsoon this intrepid navigator started on a voyage round the coast of India, at this time a feat unheard of in the navigation of those seas, his object being to prove a theory that he had long upheld, namely that communication by sea was possible, between the east and west coasts of India during all seasons of the year. This voyage as well as proving his theory to be correct, was a great service to this country, for Commodore James not only carried the first tidings to Bengal of the out-break of hostilities with

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\* Pub. Dep. Courts letters Vol. 5 of 1757, 1761, 68.

France ; but at the same time brought 500 soldiers to the assistance of Fort William; by this timely accession to their strength, Admiral Watson and Colonel Clive were enabled in March 1757 to capture Chandernagore from the French, and thus not only struck a heavy blow at their power in the East but also ruined their trade. Shortly after this Commodore James retired, being presented by the Court of Directors with a sword of honour in recognition of his distinguished services in the Marine, he was afterwards appointed to a seat on the Board of Directors and successfully rose to the posts of Deputy Chairman and Chairman which post he held for 20 years, being also a member of Parliament. In 1778 he was created a Baronet and afterwards became Governor of Greenwich Hospital and elder brother and Deputy Master of Trinity House. \*

During the critical years of warfare between France and England the ships of the Bombay Marine were constantly engaged in co-operating with the Royal Navy ; in the actions fought off the coast of India, amongst which were the defeat of the French on September 10, 1759 by Admiral Pocock, and the capture of Pondicherry by a combined Naval and Military force under Admiral Cornish and Colonel Coote ; they also successfully carried out their duties as "the Police of the Indian Seas" in protecting the routes from the hands of pirates, which still infested the west coast and Persian Gulf. Their excellent services had the effect of directing the Company's attention more closely to their circumstances and welfare, and rigorous attempts were made to improve the religious and moral characters of officers and men ; orders were sent from the Court of Directors for the regular performance of Divine Service on board all ships, and a strict prohibition of all gambling, profane swearing and indecent conversation; † and in answer to a petition in 1761, that these reforms would be incomplete unless they were permitted to wear an official uniform like a Regular Naval Service, they were ordered to wear, blue frock coats turned up with yellow, dress coats and waistcoats of the same colour, and according to a regulation

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\* Low's Hist of Indian Navy p.p. 133.

† Order book of Govt. 1751.

pattern. Large boot sleeves and facing of gold lace for the higher grades; Midshipmen and masters of gallivats to wear small round cuffs but no facings. \*

During the latter part of the 18th century great improvements were made in the Bombay Dockyard, more graving docks were built, and the yard was fitted with every facility for building and repairing ships; during this time Mr. Manackjee Lowjee one of the famous firm of Parsee shipbuilders was chief builder. Writing in 1775 of the capabilities of the Bombay Dockyard Mr. Abraham Parsons says "Here is a dockyard large and well contained, with all kinds of naval stores deposited in proper warehouses together with great quantities of timber and planks for repairing and building ships, and forges for making of anchors as well as every kind of smaller smith's work. It boasts such a dry dock as, perhaps is not to be seen in any part of Europe, either for size or convenient situation. It has three divisions, and three pairs of strong gates, so as to be capable of securing and repairing three ships of the line at the same time or at separate times; as the outermost ship can warp out, and another be admitted in her place every springtide without any interruption of the work doing to the second or innermost ships; or both the outermost and the second ship can go out, and two others be received in their places without hindrance to the workmen employed on the third, or innermost ship. Near the dock is a convenient place to grave several ships at once, which is done as well, and with as great expedition, as in any dock in England. Near the dockyard is a rope walk, which for length, situation and convenience equals any in England, that in the King's Yard at Portsmouth, only excepted, and, like that, it has a covering to shelter the workmen from the inclemency of the weather in all seasons. Here are made cables and all sorts of lesser cordage, both for the Royal Navy, the Company's Marine, and the merchant ships, which trade to those ports of India. Besides cordage made of hemp, cables, hawsers, and all kinds of smaller ropes, are made of the external fibres of the cocoanut, which they have in such abundance in India, as to

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\* Bom. Govt. Con. 24 1760. Pub. Diary. 34. of 1760 47C.

make a great article of trade among the natives of this place and those along the coast between Bombay and Cape Comorin. The yarn made of these fibres is mostly manufactured in the towns and villages on, or near, the sea coast of Malabar, many vessels belonging to the natives are laden entirely with this yarn, which they alway find a quick sale for at Bombay and Surat, let the quantity be ever so great, as it is the only cordage made use of amongst the small trading vessels of the country; large ships use much of it made into cables, hawsers, and smaller ropes; it is called Kyah.\*

Ships built at Bombay are not only as strong, but as handsome, and are as well finished, as ships built in any part of Europe; the timber and plank of which they are built, so far exceeds any in Europe for durability, that it is usual for ships to last 50 or 60 years; as a proof of which I am informed that the ship called the "Bombay" grab, of twenty four guns, (the second in size belonging to the Company's Marine) has been built more than sixty years, and is now a good and strong ship. This timber and plank are peculiar to India only; what grows to the south, on the coast of Malabar, is, however, very good and great quantities of it are brought to Bombay; it is called tick,\* and will last in a hot climate longer than any wood whatever."

One of the best examples of the strength and durability of the vessels built at this time in the Bombay dockyard by the Parsi constructors was the career of the "Swallow" which was launched at Bombay in 1777. She was first employed as a Company's packet and made several trips between India and England; was then taken into the Bombay Marine, and, after a short time, returned to the packet service, in which she continued for many years. About the year 1800 the "Swallow" not being required as a packet, was sold to the Danes, fitted in London, and went to Copenhagen, whence she is supposed to have proceeded to the West Indies; but while there, was seized by a British Man of War for a breach of treaty, and condemned as a prize. She was cut out from her anchor-

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\* Coir.

\* Teak.

age by a Sloop of War after a severe action, in which the British ship lost a number of her crew. She was then purchased into the King's service, became the "Silly" Sloop of War; after serving some time in the West Indies, she was, on her passage home, dismasted, and received other damage in a violent gale of wind. On her return to England, she was sold out of the King's service, and bought by some merchants in London; made three voyages to Bombay, her parent port, as a free trader, and was lost on the James and Mary Shoal in the Hooghly on the 16th of June 1823 \* after nearly half a century of continuous service in all quarters of the globe.

In the latter half of the 18th century the position of the East India Company's trade at Surat was extremely critical, at times the Governor and the Mogul Admiral were at open feud, and this unfortunate condition of affairs was increased by the attitude of the English and Dutch factories fomenting the quarrels and espousing different sides, and constantly fighting against each other, though their respective countries were at peace. This state of affairs reached a climax in 1758 between the Nawab, Noras Ali Khan, and the Seedee, when the final rupture took place, the fleet sided with the Admiral, who seized the castle of Surat and appointed one Meer Atchund to the office of Nawab. Noras Ali Khan appealed to the English, and an expedition was fitted out at Bombay consisting of 5 ships of the Marine, 850 European troops and 1,500 Sepoys under Commodore Watson of the Bombay Marine. The expedition sailed on the 9th of February 1752 and the troops were landed at Dentilowry about nine miles south of Surat. The first operation was against the "French Garden" where the Seedee had placed some troops, these were quickly dislodged and a battery carrying two 24 pounders and a 13 Mortar was erected, and a heavy but ineffectual bombardment of the walls was maintained for 3 days. A council of Naval and Military officers was then convened, and the following plan of attack was arranged. "The plan was" says Grose, a contemporary writer and traveller, "that the Company's grab of twenty guns and four Bomb ketches, should warp up the river

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\* Low's history of the Indian Navy p.p. 176. 177.



in the night, and anchor in a line of battle opposite the Seedee's bundar, one of the strongest fortified places they had got. This they did and a general attack began from the vessels and battery at the appointed time on the first of March. The Captain's intentions in this, were to drive the enemy from their batteries, and to facilitate the landing of the Infantry at the Bundar, whom he had embarked in boats for their transportation. The Bomb ketches made a continual fire until half past eight, when a signal was made for the boats to put off and land under cover of the vessels. This proved very successful by the prudent conduct and gallant behaviour of Captain Watson, who landed the troops with loss of only one man. They attacked the Seedee's bundar and soon put his troops to flight, with the loss of Captain Robert Inglish, mortally wounded, Lieut. Pepperell wounded in the shoulder and some privates killed and wounded. Having gained this point and getting possession of the town with its fortifications, the next thing to be done was to attack the inner town and castle, for which purpose the 13 and 12 inch Mortars were planted on the Seedee's bundar, and began firing as soon as possible at the distance of seven hundred yards from the castle and five hundred from the inner town. About six in the evening the mortars began to play very briskly, and continued their fire until half past two the next morning, which unusual attack, put the castle and town into such a consternation that they never returned a gun. Negotiations were then opened and after some time the fort was surrendered with no further fighting, the Seedee being allowed to march out with his arms and effects.

From this time until the year 1829, a period of seventy years, a Captain in the Bombay Marine was appointed Deputy of the Company, he flew the Company's colours at the peak of his flagship, but carried Moghul's flag at the main. The revenues of the districts and the customs which had been assigned went to the support of the Surat Squadron, which we find from various records averaged between 1759 and 1803 the following vessels :—The Commodore's flagship, a brig or large ketch, eight gallivats mounting from four to eight guns, commanded by Lieutenants and each having about twenty European seamen, the rest of

crew being natives, and from four to six ketches and brigs employed with convoys during the North East Monsoon.\* This Commodore, or Admiral to the Moghul seems to have received more pay and emolument than usually falls to the lot of a sailor, for although his actual stipend was only Rs. 87 per month, with allowance for two servants, he also drew fees for convoys, and tithes on all articles entering the river, which according to contemporary writers amounted to as much as £10,000 in the year, and was doubtless the reason why no one was allowed to hold the post for more than one year. A most ill natured attack was made in 1788 on the Marine in general but especially on the Commodore of Surat by the Polish Savant Dr. Hove who wrote "The Government of Bombay have a Marine of several vessels, mounting a few guns, which are to my idea useless in the time of war, for the Mahrathas have twice their strength, and usually give defiance to the English Marine. As the Bombay vessels are calculated to protect the trade, it might be easily so continued, that the trade would protect itself, by destroying the pirates which have straggled from the opposite continent, and for the immense expense the protectors are maintained with, to construct a couple of ships of war, which would oppose those that are now building at Tipu's expense in times of emergency. The convoy often consisting of two hundred "batelas" generally set out from Surat at the lift of high springs. According to its size each boat in the convoy pays the Commodore Rs. 12 to Rs. 28. This is the sole emolument belonging to the Commodore, as they call him who has the station for one year, and generally makes an immense fortune during that period. Though the honest merchants pay him this exorbitant demand, of which the Company have not a single farthing, they very often lose their merchandize under this protection. In 1788 I saw two "batelas" carried off by the Kooleys without further hindrance than a short chase by the Commodore"† In 1766 the number of ships in the Bombay Marine, with their guns is shewn in the following table.

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\* Low's Hist. of I.N. pp. 151.

† Bom. Gov. Rec. XVI. New Series 177-178.

Ship.	Guns.	Pds.	Ship.	Guns.	Pds.
"Defiance" ship ...	20	9	"Dolphin" schooner	8	8
"Revenge" „ ...	20	12	"Tiger" „	8	8
"Bombay" grab ..	20	9	"Fly" gallivat ...	{ 1 4	2 1
"Royal Admiral" ...	18	6	"Wolf" „ ...	8	3
"Eagle" snow ...	16	6	"Beagle" „ ...	8	3
"Crake" „ ...	14	6	Passard " „ ...	6	3
"Success" ketch ...	12	4	"Swift" ...	{ 1 4	4 2
"Tartar" snow ...	12	4	.....	...	...
"Fancy," Bombketch	8	4	.....	...	...
"Fox" ketchgrab ...	{ 6 2	3 2	..... .....	... ...	... ...

In this year the Company introduced a complete set of orders regarding discipline for the use of Commanders, which constituted the first body of official regulations ever published for the Marine Service.\* Later in 1771 the pay of the seaman, who had been in the habit of demanding exorbitant wages, was formally regulated, and the force, which had somewhat outgrown the needs of the period, was reduced and reorganised. Two years later a squadron of ships with four hundred European troops and a large body of sepoy was despatched to attack Hyder Ally's

\* Bom. Gov. Com. 10th March 1776. Pub. Diary 46 of 1776 159.

seaports on the Malabar coast, the expedition was entirely successful, Onore (Honovar) and Mangalore were captured, also several vessels of considerable size. The result of the expedition was however completely nullified a few months later, when Hyder Alli appearing off Mangalore with his whole army, easily defeated the small garrison who after a poor defence embarked on board the ships in the harbour, abandoning their sick and wounded and all their guns and ammunition. Onore and Fortified Island also yielded almost without resistance and Hyder Alli recovered all that the expedition had wrested from him.

The year 1772 witnessed the first surveying expedition undertaken by the Bombay Marine. It consisted of the Schooner Fox (6 guns) the Dolphin Ketch, and one patamar under the Command of Lieutenant Robinson, aided by Lieutenant Porter and Midshipmen Blair and Miscall who explored the coasts of Mekran, Sind, and Kathiawar and a portion of Arabia and Persia. This expedition may be said to have laid the foundations of the present Marine Survey of India, which throughout the vicissitudes of the Indian Naval Service has ever continued the task of scientifically delineating the coast of India, Burma and the Persian Gulf, extending at times so far afield as the Red Sea and East Coast of Africa, and in the voyages of Captain McCluer and Sir John Hayes extending even further. McCluer in the "Panther" and "Endeavour" in the years 1790-93 completed a Survey of the Pelew Islands, and of the coast of New Guinea between the Equator and 70 South Latitude, then an almost unknown part of the world. Hayes between 1793 and 1812 in the "Clarence" and "Duchess" carried out surveys in Tasmania, New Caledonia, New Guinea, Gara, and the Molucca Island, unfortunately a large number of his charts and Memoirs were captured by the French on their way Home.

In December 1775 a combined Military and Naval expedition was despatched from Bombay for the reduction of the Mahratta stronghold of Tana. The expedition consisted of 600 European troops including artillery, 1000 sepoy and 200 gun lascars under the command of Brigadier-General Robert Gordon, and several small vessels and boats of the Bombay Marine under Commodore Watson, who had previously distinguished himself in

command of the expedition which captured the Castle of Surat, and also on the Malabar Coast. Although the situation at Thana was such as to preclude the employment of large vessels, "the Governor" (says Grant Duff) expressed a wish that Commodore Watson should superintend the naval part of the enterprise, and have joint authority with General Gordon, and the Commodore on the General's acquiescence cheerfully complied." The day after the expedition had left Bombay a Portuguese fleet anchored off the entrance of Bombay Harbour and the Commander entered a formal protest against the object of the expedition which was disregarded by the President and Council.

Thana was at this time very strongly garrisoned by the Mahrattas, and negotiations were entered into and a bribe of £12,000 was offered to the Commander to surrender the fort which he refused to accept. A body of seamen were then landed from the fleet to cooperate with the soldiers; batteries were opened on December 20th and on the eighth day of the bombardment a breach which was considered practicable for assault was made. An attempt however to carry the fort by storm on the night of December the 27th proved unsuccessful, the column being forced to retire with a loss of one hundred Europeans. On the following day however the assault was entirely successful, and before New Years day the whole Island of Salsette was reduced, and the Island of Garanja occupied. Amongst those who fell at Thana was Commodore Watson who was mortally wounded on the 3rd day of the siege; a monument to his memory was afterwards erected by the Company in St. Thomas's Cathedral Bombay.

In the following year immediately after the war with the Mahrattas had ended though peace was not generally known, the "Ranger" a small 12 gun brig of the Bombay Marine, Commanded by Lieutenant Pruett, and having on board Brigadier-General Norman Mathews, Commanding the British Army operating in Bednore, and other Military Officers on their way to Calcutta, was attacked by a Mahratta fleet under the Peishwa's Admiral, Anund Rao Dhoolup who it appears was unaware of the conclusion of peace. Though the fleet consisted of two ships

and one ketch all of superior force to the Ranger and eight Gallivats, Lieutenant Pruett did not hesitate a moment in replying to the attack. A desperate action ensued and though outnumbered by fifteen to one, it was long before the Ranger was finally carried by boarding, hundreds of men pouring on board from both sides; the loss to the enemy was immense, one vessel being sunk and several of the others seriously damaged; on board the Revenge almost every officer and man was either killed or wounded, Colonel Humberstone, Major Shaw and Lieutenants Stuart and Taylor were killed, and General McLeod and Lieutenants Pruett and Serton were dangerously wounded. As an appreciation of the gallant manner in which he had fought his ship the Company presented Lieutenant Pruett with a sword of honour, but unfortunately for the Marine he died shortly afterwards from the effects of his wounds.

*(To be Continued.)*



## ***The Middle Eastern Question.***

By A. B.

In spite of determined attempts to ignore its existence the Persian question remains, as Lord Curzon pointed out more than 20 years ago, the crucial problem in the Foreign affairs of India. The fact is our late Viceroy practically occupied Seistan for 3 years, and though he used every endeavour to push our Indian Railway system to Robat, he only succeeded in extending it to Nushki.

Lord Curzon certainly some 18 months ago appeared to be weakening in his preference for a forward policy, but there are signs that he is returning to his previous position. Circumstances have changed since he first advanced the glacis theory, which, (assuming the phrase merely to allude to a buffer state,) in the light of present events must be recognised as only applicable under many qualifications.

But the glacis idea is really little more than a happy turn of phrase. A glacis is a term of fortification implying an open plain, in which obstacles may be disposed to delay an enemy under exposure to an overwhelming fire from a defending force. As applied to the Western Frontier of India the idea of a glacis is therefore meaningless, for there are no obstacles to speak of, and the "plain" is certainly not under the fire of the defenders.

In support of this "glacis" idea the Military correspondent of the Morning Post cited the "excellent example furnished by the land frontier of Egypt North of the Red Sea, where the almost waterless Isthmus of Suez has ever offered a tremendous obstacle to military operations between Asia and Africa." Possibly it has done so; but it did not prevent, during a period of six successive centuries, the invasion of Egypt from the East by the Persians under Chosroes, the Saracens under Amrou, by the Seljuks, by the Turks, and by the Mongols under Holagou, who however was successfully resisted by the Mamelukes. In recent times Mehemet Ali successfully invaded Syria from the Egyptian side.



One can conceive a thickly populated country forming an efficient obstacle, but an unoccupied glaxis is certain to be filled up from either side, its deserts can readily be traversed by railways, and it is therefore no protection whatever.

The underlying fallacy is that under modern conditions the old theory of the value of a desert frontier is still applicable. This fallacy is responsible for much of our present policy in Persia, which, with the regrettable exception of the C. I. H. episode, can best be described as one of masterly inactivity.

Perhaps this phrase was invented by some politician to suggest a touch of cunning in a policy of ineptitude, or it may merely have been certain the sarcasm of an opposition critic. Whatever its origin, it has acquired a vogue, but it is clear that a policy of inactivity can only be masterly at a moment when some previous move has forced an opponent into a situation from which he can only extricate himself by some action contrary to his own interests. In the matter of ourselves and Russia in Persia, a policy of inactivity has no such effect, but leaves the Russians a free hand to act as they may please.

North of Quetta, and right round to Burma, India is surrounded on its land frontier by impassable mountains. It is true that the invasion of India is practicable over these mountains, but such invasion could only be in the nature of an unsupported raid, which, though it might be temporarily successful, could never be maintained against an army based on protected sea routes.

But the side of Persia remains open right up to our railheads. Here no obstacles are presented either by hostile nations, or by impassable country. There is a clear road for the Russians through Persia to Seistan and the ocean, defended only by the efforts of diplomacy. Based on a position on the open sea Russia would be able to meet us on equal terms, and could support raiding invasions from the North-West and from Seistan by a concerted movement from the coast. It is for this reason that the possession of India may be decided eventually in Persia.

Affairs are now moving very fast towards a crisis, but so far a final choice has not been made among the various solutions of the Middle Eastern Question.

There is first the "glacis" position, which, as I have already attempted to show, is useless as a protection. It may perhaps be advisable to examine some other aspects of this theory, which appears to imply that the British Government will always remain in India in its present form. Now events of the last 20 years have clearly shown, that the policy of succeeding Viceroys of India, during that period, has invariably been one of encouragement to the aspirations of natives of the country to take part in its government. Municipalities and councils are now everywhere exercising more and more influence over the minor details of administration. On the other hand we have just heard one of the most distinguished Lieutenant Governors of recent years declare, that we could never leave India, for it would immediately revert to a state of anarchy. This hardly seems consistent with the trend of recent policy, which clearly indicates a wish to develop national forms of Government, unless we suppose that he merely implied that to hand over the government of the country to a dynasty of pleaders would be to see it immediately revert to a mediaeval barbarism. From that opinion, no doubt, few will differ. I believe I am right in saying, that less than four generations ago, it was still the custom for certain native princes to put out the eyes of their enemies, or to flay their prisoners alive for an afternoon's amusement.

But though the policy of Government appears to anticipate that eventually the mass of the people will be raised above its present undeveloped stage of existence, and take some part in representative institutions in aid of the supreme government, still there will be a majority of Anglo-Indian officialdom, who will always decline to admit the possibility of any such development, or the practicability of any form of government of oriental races, other than a despotism. It is at least improbable that Anglo-Indian officials accustomed to the despotic mode of thought will ever be able to recognise any such development, even if it were to occur.

At the same time it must be admitted that with the increase of prosperity great progress is already being made in the cultivation of an intelligent public, and, as capital becomes more widely diffused, a still larger proportion of the public obtain a material interest in the country. Capital is being forced into other uses than usury and its owners are being brought to ideas of prudence and foresight and so of good government.

It is therefore possible that although the general mass of the population may never raise themselves above their present stage of development, at least in a period of which we can reasonably take cognizance, there may arise a wealthy industrial population capable of assisting in the government of the country. Although this may scarcely coincide with our ideas of representative government, it must be remembered that those ideas were derived from ancient Greek democracies in which the majority of the population were slaves of no political account.

It is at least incontrovertible that a direct British Government of India can never be national, but must always remain in the nature of a military despotism, and for that reason, in the event of attack from outside, our strategical position would always be weak, with a doubtfully loyal population behind us.

It is therefore recognised that it is to our advantage to make every effort to foster national ideas in India; and by teaching in municipalities and councils the principles of good government we may gradually devolve some portion of the administrative details on that section of the population, which has material interest in the progress and good government of the country. The anarchy of previous eras has been due to the fact that the ruling power was centralised in a military unproductive caste, whose only idea of government was loot and rapine, and whose methods reduced all the lower useful castes to a condition in which they lost the will and power to protect themselves. If then we now succeed in developing some national feeling in those castes and are able to convert the population of India from subjects to friends and allies, whose interests will be bound up with our own and eminently opposed to those of Russia, it is clear that the strategical situation will be relieved. Then the Supreme Government relieved of anxiety and the details of

administration, while at the same time in a position to retain a hold on the commerce, markets, and raw materials of India, which have been the chief source of British prosperity since the 17th Century, may be able to look round and see where it is necessary to protect that supremacy against outside enemies.

At once its attention is called to the weakness of India's defences on the West, due to the want of physical obstacles. This may be overcome either by developing a strong intervening nation, or by occupying the intervening country.

There are objections made to our occupying Persia, that we have neither the wealth nor the numerical strength necessary to hold both Persia and India.

This is perfectly true; but the difficulty will gradually disappear if our policy of developing Indian nationality is successful. We may indeed believe that it has already shown some measure of success. The supreme government was able to abandon Madras in the eighteenth century, and the Presidency is now almost self governing. Bengal has in turn been left behind, a move foreshadowed by the adoption of Simla as summer headquarters 60 years ago. Even Delhi is not necessarily its permanent resting place. The cost of our occupation of Persia would not at first be unbearable, and, as it develops, we should be able to reduce our liabilities in India, and throw them on local administrations.

As an alternative, it has been suggested, that we should encourage Russia to expose a frontier on the Persian Gulf, where it would be accessible to attack at any moment. It is only necessary to point to the Crimean War, and the futile efforts of the Japanese in the far East, to understand how impossible it is to do any real harm to Russia by frontier fighting.

I think therefore it is clear that not only are we forced to adopt the plan of occupying our sphere in Persia but also that we can do so with confidence. For the completion of our design we must renationalise the Persian people, just as we have been striving to do in India for the last 50 years. For that purpose it is essential to open up the internal communications of the country by roads and railways, and the external communications with existing civilisations. This is already being carried out by Russia in the North and, unless we wish

Russian civilisation to overflow the country by a main artery from Europe, we must obviously provide a similar artery, through which our own ideas of civilisation may flow over at least our own sphere of activity. At the same time such an artery will be necessary to support our military position in the country. The junction of our artery with that from the North will naturally follow, advantageously to Indian trade relations with Europe, and if we are opening a door for the vices of the East to corrupt once again the civilisation of Europe, we are at any rate at the same time helping the people of India to advance more quickly along the road to civilisation, which will bring them to the point where they can be entrusted with the management of their own affairs.

This main artery from India across the centre of Persia into Europe is therefore the essential feature of a first line of communications with Persia ; as the country develops, quicker outlets to the sea for its trade will be required, and Seistan, Bunder Abbas, and Shiraz will enjoy the benefits of connection with the system of railways.

About those who have favoured this trans-Persian railway, Many hard words have been said and some extraordinary alternative schemes have been suggested. The most astounding is the so called "all red" route from Busra to Egypt. Nearly all are valueless as they are not through routes but involve sea voyages of varying distances.

We were told that this Trans-Persian railway would be an excellent thing for Karachi landlords, but that their gasconades would weigh little against the loss of our virgin glacies ; that such a "wild cat" scheme would never receive financial support ; and that, even if the line were made, no one but an idiot would leave the floating palaces of the P. & O., to venture a hazardous journey through the "inferno" of Mekran and the "arctic" rigours of the Persian plateau. Dr. Johnson has been credited with defining a ship as "a prison with a chance of being drowned." Probably in his days prisons were much overcrowded, but the modern prison is to be preferred to a crowded P. & O. steamer in the Red Sea. Contrast the civility of an

obliging guard with the rigid discipline of a typical liner. As to the "inferno" of Mekran, anyone, who can survive a railway journey across the plains of India in May, will thoroughly appreciate twelve hours of the sea breezes of the Mekran Coast. Many an invalided officer, will be reinvigorated by his journey across the Persian plateau which, I can affirm, has the finest climate in the world. He will probably stop at the big railway hotel at Ispahan for a few days to enjoy the wines and fruits of that ancient capital.

This railway will reduce the time to get a reply to a letter from England by one half, and it will obviate a sea voyage of 6,000 miles for an expenditure little less than men are seriously proposing to spend in eliminating a 22 mile passage of the Straits of Dover, mainly for the benefit of the tourist traffic.

There is not the least doubt that 75 per cent of the existing Indo European passenger traffic will leave the sea as soon as a good rail service is provided, and that an equal amount of entirely new passenger traffic will be developed, mainly among the middle class public. In spite of the horrors of travelling by sea as a deck passenger, exposed to the elements, and the caprices of "Captain Kettles," the inhabitants of the East are indefatigable travellers, and even the mind Hindu will not be too timid to step into a railway train. No one can tell what rapid advance the civilisation of India may take when attached to the West by a continuous line of rail.

It has also been objected that it will never be politic to send mails overland instead of by P. and O. I have never been able to understand why this objection to running through Germany and Russia instead of through Italy and France has been raised, unless by interested persons. In fact I would go so far as to urge the British Government to encourage the construction of the Trans-Persian Railway, merely to obtain the benefit of the increased social intercourse with those countries through which a tri-weekly Orient Express will run, and which will have a humanizing influence on international relations of incalculable value.

As to the financiers who have received such commiseration and solemn warnings, surely they can take care of themselves. But their case is scarcely desperate; they are unlikely to rely solely on traffic for their profits, but even if they do, surely it is better business to put £20,000,000 into 2,000 miles of line across Persia rather than into a tube under the Sea between Dover and Gris Nez. The line is really under 2,000 miles in length, and the North Western Railway of India, with gross receipts of Rs. 340 a mile a week, has up to date barely cost £10,000 a mile. The Uganda railway, a narrow gauge, certainly cost £9,000 a mile, but it had a length of less than 600 miles, and was constructed through a remote and savage wilderness under conditions of climate, supply and transport, such as were certain to increase the cost enormously. Railways in Persia would be built under no great difficulties of any kind. Railway financiers still exist who can realise the tremendous potentialities of this scheme, and who know all the moves of the game of railway promotion.

But the disagreeable fact must not be forgotten, that Persia shares with all the countries between the Indus and the Euphrates the curse of the nomad tribes, of Arab, Turkoman, Kurd, or Baluch stock. The nomad is a parasite of the goat. It drives the goat about the country and helps it to increase and multiply far beyond what the country will stand, while it lives on the goat's milk. The camel is a parasite of the nomad, which it helps to move from camp to camp, while stripping off whatever vegetation remains beyond the extreme reach of a goat on its hindlegs. After the camel and goat have been over a country a few times there is left nothing but some excessively thorny and peculiarly offensive smelling or poisonous shrubs and the date palm. Man lives on the date fruit, the only subsistence beyond the camel's reach, and on the abundant supply of fish on the Persian Coast. If any work is done, it is the work of women or of slaves. But nothing is done to replace the waste that is caused, and no country under nomad influence can escape becoming a desert.

There remains an industrious Persian agricultural stock, which might be perhaps more correctly linked with Northern fair

skinned races, There are, too, many semi-nomads, who will quickly settle down under security, and swell the numbers of the producing population, which with the aid of capital will quickly reclaim large areas of fertile country, depopulated by centuries of misrule. As to the real nomad, the railway promoters only hope may be that his nomadic propensities will be satisfied by railway travel, which he will be able to afford from the profits of the sale of his wool and ghi, which cheap railway carriage will make valuable. Nor must we forget the carpet industry, and it must not be imagined that a nomad race, whose women are capable of maintaining such a beautiful indigenous art, has anything in common with the unsophisticated masses of Hindustan.

Whatever be the event, there is little doubt, that we are now at a crisis in the history of our connexion with India. By seizing our opportunity and advancing to the invigorating plateaux of Persia, we may be preparing to escape the fate which has hitherto invariably overtaken the conquerors of India.





***Lecture on the North West Frontier Province  
and the Pathan Borderland given at  
Peshawar in March 1911.***

BY MAJOR E. W. COSTELLO, V. C. 22ND PUNJABIS.

**I. History.**

Very few authentic records of frontier history exist, although something is known of the Peshawar Valley in ancient times. Alexander passed through Peshawar City in 326 B. C., Chanda Gupta the Buddhist captured it in 303 B. C. He was succeeded by his son Asoka who extended the Buddhist faith as far as Kabul and Kashmir. Asoka has left traces to the present day, on the "rock edicts", one of which can still be seen at Shahbazgarhi 7 miles from Mardan.

The district remained under Greek rule until 165 B. C. when Menander and the Bactrians gained possession of it, to be overthrown in their turn by Scythians in 80 B. C.

At this period Buddhism was the common religion between Kabul and the Punjab. The Buddhists were of the same race as the Hindus, and were in an advanced state of civilization, living in well built villages which were usually grouped round a central monastery, to which the best site was invariably allotted.

The ruins of the old villages at Takhtabhai, Kashmir Smats, Shahbazgarhi, Jamalgarhi and at numerous other places in the district show that the builders were better workmen than their successors of to-day.

In the period before Christ, the greater part of the Peshawar Valley was a swamp infested by tiger, rhino, and other wild animals. The remains of the swamp are to be seen in the snipe wheels of to-day; these in their turn are rapidly disappearing under the reclaiming hand of the grass farm officer and in a few years time, tales of 17 couple of snipe shot on the artillery wheel will rank with those of Babar's tigers at Jamrud.

Buddhism appears to have flourished up to the 5th century, as we know from the evidence of one Fahian, a Chinaman, who visited Peshawar about this period; but another Chinaman Houn Tsan visiting the district in the 7th century spoke of the people as relapsing into Brahminism.

At the end of the 8th century migratory Pathans from Khorasan settled in the hills about Peshawar, and in 978 A.D. formed an alliance with Sabaktagin who had pushed on from Kabul. These Pathans embraced Mahomedanism in Mahmud-i-Ghuznavi's time, 1017-1023 A.D. and contributed a large contingent to the army with which he conquered India.

It was now that all the Buddhist and Hindu villages were destroyed and the country turned into a waste, the inhabitants fleeing to the mountains, whence they have gradually been pushed back into Kafirstan.

Peshawar remained a province of Ghazni for over a century, the kingdom extending as far as Lahore.

The invasions of Genghiz Khan and Timur Lang, which took place in the 13th and 14th century, completed the havoc caused by Mahmud.

At the end of the 15th century the Yusufzais poured down from Kabul and attacked the Swat Valley. Their tactics in forcing the hill barrier are interesting. They moved to Shahkote and made a great pretence of attacking the Mora Pass. The Swatis collected to oppose them, but during the night the Yusufzais, leaving their women in camp to deceive the enemy, marched across and captured the unoccupied Malakand Pass. We acted in much the same manner in 1895 when we threatened the Shahkote Mora Pass.

The ejected Swatis migrated to Hazara where they still exist in Kagan Agror and Manshera, while the Pathans divided up the country into tribal shares which continue to the present day.

In 1505 Babar invaded the Peshawar Valley by the Khaibar route and undertook numerous expeditions against the hillmen. He employed strong light columns and tried to effect a surprise, but made little headway until 1519 when he crossed the Kunar

mountains, captured a Bajaori fort, and after slaughtering all the defenders erected a pyramid of 3 000 skulls at Tora Tigga. The massacre disheartened the other tribes who made prompt submission.

Between Babar's reign and the invasion of Nadir Shah in 1738, history records little of interest.

Nadir Shah advanced on Peshawar by the Bazaar Valley and after turning the position of the Afridis who were holding the Khaibar, built himself a fort in Bazaar. He does not however appear to have succeeded in bringing the valley under complete control.

Ahmad Shah seems to have been more successful in 1747. He established the Duranni dynasty at Kandahar and dominated the Peshawat Valley.

The Sikh invasions followed, and the country was almost completely under Sikh rule until 1849 when it was surrendered to the British Government. For a short period, in 1825, Saiyad Ahmad of Bareilly established his sway. He fought Sikhs and Durannis in turn but the people soon tired of his exacting rule and overthrew him. His followers exist to-day as the Hindustani fanatics of Buner.

Space does not permit of a detailed record of our rule, but the names of George Lawrence, Lumsden, and Nicholson need only be mentioned to remind us of how the people of the frontier remained loyal during the Mutiny.

The North West Frontier Province was separated from the Punjab in 1901, with Sir Harold Deane as the first Chief Commissioner. For little more than 60 years our rule has been maintained, during which time we have penetrated the hills and obtained a real influence across the border; good roads, canals and railways have been built and the prosperity of the people has been greatly improved.

## II Geography.

The main roads of the province are:—

- (1) The Hasan Abdal, Abbottabad road to Kashmir, with a mule road branching off to the Kagan and Gilgit.

- (2) The Chitral road, a good cart road to Chakdara, a mule road beyond, to Badakshan, Wakhan and Chinese Turkestan.
- (3) The Peshawar, Shabkadar cart road, with mule tracks to Dakka and Nawagai.
- (4) The Khaiber. From Peshawar into Afghanistan.
- (5) The Khushalgarh-Kurram road, with camel roads to Ghazni and Kabul.
- (6) The Bannu-Tochi cart road to Datta Khel with camel roads to Ghazni and Kabul.
- (7) The Dera-Ismail-Khan, Kajuri road (The Gomal) to Mukur.

These are connected laterally by the Dera-Ismail-Khan, Bannu-Kohat, Peshawar, and Mardan roads.

The following distances are of interest :—

Landi Kotal to Kabul	155 miles.
Parachinar to Kabul	90 „
Datta Khel to Ghazni	100 „
Kajuri to Mukur	170 „

Besides these we have the railway to Dargai, Jamrud, Thull, and Bannu.

The Indus is bridged at Attock and Khushalgarh; boat bridges exist in winter only, at Darya Khan and Ghazni Ghat.

Rivers South of the Kabul may be considered fordable except after heavy rain. To the north, the Kabul, the Swat below Chakdarra and the Panjkora in summer are unfordable barriers which isolate the countries they contain,

The Kabul is bridged by the Nowshera Railway bridge.

There are also suspension bridges over the Panjkora at Chuttiatan and Sado, and across the Swat at Chakdara,

Boat bridges across the Kabul exist at Shah Alam, Nahakki, Charsadda, Abazai and Nowshera. They can generally be relied on for the passage of field guns but are occasionally swept away when the annual floods are severe,

Most invaders of India have used the Peshawar Valley routes, though some have come down the Gomal.

Alexander's army marched in two bodies ; one over the Kunar Mountain via Bajaor, Swat, and Buner to turn the Valley; the second from the Khaiber on Attock.

Babar came first by the Bazaar and later across the Kunar by the Hindu Raj Pass,

Nowshera seems to have been the cockpit of the Valley and has been the scene of many battles between the early settlers Afghans, and Sikhs. The dak bungalow at Nowshera Tehseel is built on the site of one of the hardest fought in this part of the world.

### III. Administration.

The province is bounded on the east side by the Hazara District and the River Indus, and on the west by independent territory, the Durand line marking the point where our influence ceases and that of Afghanistan begins.

There are five districts, each under a Deputy Commissioner, *viz.*, Hazara, Peshawar, Kohat, Bannu and Dera Ismail Khan.

Each district has its garrison of regular troops and a force of Border Military Police, which latter is now in a state of re-organisation. In addition to the above, since 1910 villages along the border have been armed with Martini rifles, local maliks being held responsible that weapons do not disappear. Four rounds per man are supplied for annual practice and it is surprising to see how well some of the men shoot.

These armed villages greatly strengthen the hands of the Border Military Police, as raiders when attacking one village are bound to expose their rear and flank to another, thus hazarding their retreat.

Some of the villagers are ready helpers, but others go so far as to complain that the only things which they possess that are worth stealing, are their rifles; also that Government is obtaining their services without payment.

They should invariably be able to mark down and give warning of the passage of robbers through their beats, but it is the business of the military to round up gangs if they are well armed and show fight.

Between our administrative border and the Durand line lies a strip of independent territory, 50 to 100 miles broad, separating us from and acting as a buffer against Afghanistan. By agreement with His Highness the Amir, the British Government is at liberty to take over control of this country if necessary.

Piercing this strip of independent territory are four valleys, namely the Khyber, the Kurram, the Tochi and the Gomal. These, together with the Malakand, are administered by political agents, and may be regarded as British territory. Each political agent is supported by a militia; the Khyber Rifles and Kurram Militia being wholly recruited locally, while the Northern and Southern Waziristan Militias recruit only about half their strength from local sources.

The militias are officered by British officers of the Indian Army, and are well drilled and efficient. They have to a great extent relieved the regulars of all garrisoning of frontier posts; in many ways a fact to be deplored as the experience was invaluable.

#### IV. Characteristics and Customs of the Pathans.

The Pathan unlike his Balooch fellow is most democratic and, when in a position to do so, acknowledges no authority but his own.

Many distinctions are drawn between the fighting qualities of various tribes, but taking them generally they are all hardy and brave, can live and work on very little, are fairly good shots and no mean enemies.

The Afridi has little faith in the intervention of an Almighty who will render his enemy's bullets harmless, and is consequently the most canny in his methods. He sees no point in getting hurt without need and does not close with a man whom he can bring down with a long shot. The men of upper Swat and Buner are more gullible and tales of bullets warded off by angels, or turned to water on touching the true ghazi, find ready credence; with the result they can be worked up into a frenzy and persuaded to hurl themselves blindly against the infidel.

The Mohmands and Wazirs steer a middle course between the two. This difference in tactics is of course largely due to armament as well as racial characteristics. It is possible that the late influx of rifles may assimilate methods,

Tribal Law is strict in its main rules, which are backed by the Qoran, and the blood feud takes the place of a court of justice. Every Pathan knows that murder and certain other offences will

involve his family in a feud and what is more, he realizes that this addition to an already chequered existence will draw the wrath of his relations on himself. He consequently avoids such crimes unless temptation proves too strong.

Minor quarrels are settled by the elders or, in important matters, by Jirga ; war if necessary, forming the final appeal. Taking things all round the tribesman gets on very well without courts or police.

Each individual considers it due to his manhood to maintain a certain semblance of order in his immediate circle and in this way becomes in himself both policeman and judge.

Laws of hospitality and Badragga (escort) are rarely violated and then usually through accident or misunderstanding.

A drive through the Kohat Pass shows the Pathan living his own life in his own way, and the continued absence of any breach of peace against the traveller is most remarkable. The men all carry arms but are peaceful and law abiding, except when a reasonable cause, calls for action.

Badraggas are provided to strangers who wish to pass through any portion of their country, payment being exacted and another escort obtained on entering the neighbour's territory. The badragga frequently consists of a small boy but his presence is a visible pledge and suffices to safeguard the traveller.

It will be seen that life across the border is not so impossible as many imagine. Criminals of course exist in large numbers, but so they do elsewhere.

The system just described develops powers of decision and independence with the result that the Pathan is extremely quick witted and clever. Compare the average coolie with his counterpart in England. The man who drives a mule will converse intelligibly on current affairs, will produce excellent reasons for his various acts and frequently has a surprising fund of quaint knowledge such as the names of birds and flowers and the association of cause with effect. The cleverest thing the Pathan ever did was to induce Commanding Officers of regiments to excuse him from passing examinations, with the result that all the drudgery of keeping the range registers and accounts was taken



off his shoulders by plodding Sikhs and Punjabis whilst the Pathan drew the pay and smiled.

He is often represented as a treacherous lying villain. So he frequently is, but he must be looked at from his own point of view. For instance, in a blood feud he has no course but to kill his man in the surest way, and the safest to himself. He is in exactly the same position as a hangman who has to execute a criminal, the difference being that the latter has adopted the profession from choice whereas the Pathan is forced to it by necessity. Children are not spared, as an opportunity lost may entail the death of a son. Any other course would strike him not only as illogical but as positively wrong. An incident in point occurred a short time ago when some Shilmanis managed to surround the house of a family with which they were at feud. All the members were present and the chance of settling the quarrel for good and all was too tempting to be lost. They killed the males but spared the women. One of these however, was with child. If this proves to be a boy the feud will be reopened and the responsibility from their point of view will lie with those who lost the opportunity of settling the vendetta.

Laws of hospitality are but rarely infringed and then only because a man is overcome by the temptation of making the most of a fleeting opportunity. The act is of course inexcusable and is regarded with opprobrium by his fellows, but it is not fair to condemn the entire race on account of a few such incidents whilst we accept as granted the many occasions when a host has not only spared but protected at his own risk an enemy who has taken shelter under his roof.

The light of after events has to some extent explained, though not excused, even the Maizar incident and shown that the attack was unpremeditated and due to a broil, brought on by a chance quarrel.

Most officers of the Indian Army will agree in saying that the Pathan has done loyal service and displayed qualities quite at variance with the character of the lying, blood-thirsty ruffian in which he is not infrequently represented. Many of his best qualities however disappear as he grows older when greed and ambition assert themselves and get the upper hand.

The next stage in his development not infrequently produces a venerable grey beard, sated with all that this existence offers and preparing for the joys of a world to come.

We should some times consider his view of us. He dreads our laws and the delay they entail and would far rather pay a large bribe to have his case settled at once, than see his money vanish into the pockets of vakils during a long lawsuit. Many natives are ruined in our courts as they force their suits through every possible court of appeal, thus falling readily a ready prey to unscrupulous lawyers.

The Pathan is full of self conceit and considers himself a match in the field for our best troops. A good hammering is badly required to eradicate this impression.

The feeling is fostered by our constant withdrawals from his country. The defeat, though appreciated at the time, is forgotten. children hear their parents' version of events, in which they naturally appear at their best and the Government to the worst advantage; it must have been hard to argue against Babar's pyramid of skulls at Tora Tigga. A notable feature is that our late enemies do not as a rule hate us. This may be ascribed to the fact that we have never fought them to the finish, our treaties savouring more of decisions in settlement of disputes than of terms dictated by a conqueror,

#### V. Armament and Fighting strength.

The tribesmen as all know, are now well armed, the quality and description of weapons varying greatly. Forty per cent of Afridis possess Lee-Metfords or Martinis of sorts, whereas it is doubtful if ten per cent could produce a like rifle in Buner.

Our superior fire, discipline and ammunition supply, would always remain great factors in our favour even were every Pathan to carry a "303."

About 10,000 Pathans from across the border are serving in our army, reserve, Border Military Police, and Militias, more than half being Afridis, the average amongst whom works out at one in eight of the tribal strength (40,200).

11,000 of the tribes within our border, are now serving; of these Yusufzais and Khattaks provide a quota of about 3,000 each.

The total fighting strength of all the tribes across the frontier may be taken at some 300,000. They are, however, very scattered in the long narrow belt of independent territory, and can, as a rule, be dealt with by our troops in detail.

Beyond the Durand Line lies Afghanistan, the home of a hardy race numbering close on 7,000,000 and with an army of nearly 100,000 men.

Kabul is not only the capital of Afghanistan but is also the centre of Pathan Mahomedanism.

Here repairs the Afghan in search of religious teaching, as also does the Pathan of our N.-W. Frontier Province. They visit the shrines, sit at the feet of the mullas and make obeisance to the King of Islam (a title commonly accorded nowadays to the Amir.)

From here are pulled those strings which influence fanaticism along the border. The working is at times reported as becoming rusty, feeling is too friendly towards the Sirkar; then it is that we hear of local unrest and preaching friars (emissaries of Kabul) whose task it is to keep religious hatred smouldering.

## ***The Italian Campaign in Abyssinia,***

OCTOBER 1895 TO MARCH 1896.

BY CAPTAIN G. P. STOCKLEY, 102ND K. G. O. GRENADIERS.

1. The disastrous campaign of the Italians in Abyssinia, which terminated at Adowa, and of which comparatively little mention is to be found in most tactical works, presents nevertheless a series of lessons which illustrate, the more clearly from the terrible consequences that followed on their neglect, several most important principles in both strategy and tactics.

2. A further interest attaches to it owing to the present position of Abyssinia, which bears to Egypt something of the same relation that Afghanistan does to India.

3. Both are countries in a state of only semi civilisation and both are known to be well equipped with modern weapons, whilst owing to its control of one of the main sources of the Nile the political importance of Abyssinia in relation to the Soudan can hardly be overestimated. It is well known also that the mere existence of a warlike and uncivilized nation on the frontier of a civilized power, is always fraught with hostile possibilities, and since Indian troops would undoubtedly be employed as before in any future campaign in Abyssinia, some account of the disaster that befell Italy in that country may prove of interest.

4. The campaign itself was a simple one, waged by the Italians with a force of moderate strength, such as we have ourselves frequently employed in India, and under not very dissimilar circumstances. In its effect followed cause with unerring regularity, and the lessons of the campaign are plain to all; so much so indeed, that the extreme caution that has marked the Italian strategy in the recent war in Tripoli, is probably largely due to their remembrance of the disastrous result of their rashness on this former occasion.

The short account here given is intended more as a review than as a study of this remarkable campaign, the facts of which are taken entirely from the work by Mr. G. F. H. Berkeley entitled, "The Campaign of Adowa and the Rise of Menelik," which

gives an excellent history both of the war and of the events that led up to it. The attached maps also are taken from the same source, and it is hoped that this short sketch may lead others to the study of a very valuable and interesting book.

5. The causes of the war are well set out in Mr. Berkeley's work—and to soldiers in India will form interesting reading, for certain historic parallels in our own dealings are brought forcibly to mind. Briefly, Italy, having established her colony at Erythrea on the Red Sea littoral, desired to extend a protectorate over Abyssinia, partly from ambition and partly from fear of being forestalled there by other nations. Her opportunity came on the death of the Emperor John of Abyssinia in battle with the Dervishes at Metemmeh in 1889. There were then two claimants to the throne, one being Mangasha the natural son of the old Emperor, and the other Menelik the Ras or King of the important province of Shoa in the south of Abyssinia. The Italian Ministry in exchange for a treaty which besides greatly extending the colony's frontiers contained a certain degree of acknowledgment of a protectorate, lent their full support to Menelik, with the undoubted hope of eventually through his aid extending their power over all Abbyssinia.

6. As is not unusual however when western statesmen negotiate with an oriental monarch, the mistake was made of entirely underestimating both Menelik's ambition and his ability, one might add also his unscrupulousness, but for the fact in Europe also the observance of such treaties depends chiefly on the power to enforce them. Anyway, despite the protests of General Baldiserra the then governor, who saw clearly the danger of such a policy, the treaty was concluded and Menelik was allowed a liberal loan of Italian money. He wasted no time in applying this to the purchase of arms and ammunition, which the Italians obligingly assisted him to import and therewith he consolidated his power and made himself Emperor; but when it came to the carrying out of his share of the bargain it was another matter.

After a deal of equivocation he finally denounced the treaty, proclaimed himself an independent sovereign, and announced as the boundaries of his kingdom, a line altogether

at variance with the Italian claims. Unless therefore Italy was prepared to renounce a large part of her pretensions in that direction a conflict was inevitable.

7. Unfortunately for Italy, the Ministry of Signor Crispi then in power, was not of a character to deal effectively with so grave a crisis, on the one hand it was reluctant to abandon its schemes of conquest in Africa and consequent popularity at home whilst on the other it refused in the then depreciated state of the national treasury to expend the money on preparations necessary to ensure success. As a consequence the fatal error was committed of embarking on a forward policy without the means to support it. Menelik's power and ability was systemetically underestimated, and the new Governor, General Baratieri was allowed to continue to extend the frontier of the colony, culminating with the annexation of the northernmost Abyssinian province of Tigre, without any adequate preparation being made to meet the storm already gathering. The Italian commanders also, deceived by a series of brilliant victories over tribal gatherings, never believed till it was forced upon them, that Menelik could possibly maintain a large army in the field or unite the ever warring chiefs of the country in a common cause.

8. This was the position at the end of October 1895 when the state of the rival forces was roughly as follows. General Arimondi in charge of the newly acquired province of Tigre had his head quarters at Macalle and possessed in all about 7500 men, of whom only 4500 were regulars. In addition he had the support of two of the petty chiefs of the province who however only brought him another 600 men. For the further defence of the colony, General Baratieri, then at Adigrat, could muster only some 6000 men mostly of a militia standard. Beyond these he had to rely on reinforcements from Italy who had for the most part not yet embarked. Menelik on the other hand was already marching on Tigre from the south, with an army estimated as high as 120,000 warriors. With extraordinary ability he had obtained the support and presence of all the great chieftains of Abyssinia, and there existed besides throughout the country a national spirit directed

against the Italians, which the most experienced observers had never believed possible.

9. The Abyssinian army formed a strange mixture of the old and the new forms of warfare. Each feudal chief led into action his own retainers independently of others, there was little attempt at any plan of battle or any organisation to direct it, but the chiefs and warriors alike habituated to war were quick to seize any tactical advantage without the need of orders. The men were fanatically brave and of extraordinary activity and endurance. A large part were armed with modern rifles and were able to use them with effect. In attack they favoured the half moon formation of the old Zulu impis, and like them always endeavoured to envelope the flanks of their enemy. Like the Somalis, riflemen and spearmen were mixed in the fighting line, and when a rifleman fell another took his place and weapon, but in dash and courage they were far superior to Somalis. The bulk of the army was composed of infantry but from the Galla tribes of the south came a large body of horsemen distinguished for their activity and boldness. Menelik also possessed some few modern guns, and though his gunners could make no stand against the Italian batteries in the field, they were used with effect at the siege of Macalle. Such then was the army, formidable from its courage and its overpowering numbers, and led by the greatest man that Abyssinia has produced.

10 Of Menelik's personal character little is accurately known, he is said to have been averse to war, and to have shone more in policy and organization than in actual fighting. Nevertheless in this campaign he showed himself a sound if not a brilliant leader not to be induced to fight against his judgment or on unfavourable ground. When it is remembered that his army was composed of the followers of so many warlike and half independent chiefs, generally at feud with each other and of doubtful loyalty, one cannot but wonder at the skill with which Menelik kept such a force together, and without transport or commissariat maintained it in the field.

11. The Italian forces consisted of, first the native battalions of the colony known as Askaris and secondly the regular regiments from Italy- The native troops comprised infantry and

some mountain batteries, but no cavalry either native or Italian were employed, though the presence of some light squadrons would have been very useful despite the difficult nature of the country. The Askaris were recruited from the Christian and Mæhomedan tribes of Erythrea and the adjoining country, whilst Soudanese were preferred for the artillery. All accounts agree that they made excellent native troops, brave, hardy and faithful to a remarkable degree. Their marching was splendid and they were of course subsisted much easier than Europeans. The regiments from Italy were not available at the outset of the war, and the defects of the army that fought at Adowa will be described later. It is however worth noting here that the Italian regiments employed in the campaign were composed of volunteers for African service drawn from many different corps, and hence despite courage and patriotism, lacked the discipline and mutual confidence between all ranks which long training in a regular battalion confers. The supreme command of the operation was in the hands of the Governor General Baratieri, whilst General Arimondi was nominated commander of the troops, but was unable in the circumstances to exercise any truly independent power. This is generally held to have been the cause of a certain amount of friction between the two generals and to have exercised a baneful influence on the course of the war.

12. The campaign opened badly for the Italians. Baratieri's plan was for General Arimondi to hold Macalle as the first line of defence and if attacked in force, to withdraw on Adigrat, where the whole army was to concentrate. But Arimondi who it is said favoured a bolder policy, pushed forward a force of observation of 1800 men under Major Toselli to the advanced position of Amba Alagi 36 miles to the south. Owing to an error in telegraphing a message, Toselli was led to believe that he was intended to hold this position till reinforced, with the result that his small command was cut to pieces by the Abyssinian advance guard, Arimondi thereupon was forced to retreat hastily on Adigrat leaving a garrison of one native battalion and two guns in the small fort at Macalle.

13. This was undoubtedly a mistake even though there was no time to destroy the stores in the fort, for the Italians could



ill spare a single battalion from their small force, whilst Menelik had he wished, could easily have detached sufficient force to contain the garrison without impeding his advance. As it happened Menelik halted and laid siege to Macalle, the relief of which was impossible, whilst the water supply situated outside the fort was soon cut off. After a gallant resistance and the repulse of several assaults, the garrison was reduced to great extremity, and finally capitulated by Baratieri's order on the 20th January 1896.

14. Menelik granted very favourable terms to the garrison, agreeing to escort them honourably to the Italian camp at Adigrat. In this however he was not actuated solely by generosity, for his army had consumed all the supplies round Macalle and a move was imperative. With a truly oriental strategy he utilized the captured garrison and its escort as a screen between his army and the Italians, compelling them to march by a circular route to Adigrat for this purpose, whilst he himself moved his army to Adowa, the centre of a fertile and untouched district and from which he could harass the Italians line of communication.

Here he halted hoping that the Italians might be induced to leave their strong position at Adigrat in order to attack him.

15. Meanwhile Baratieri was assembling his army at Adigrat, the reinforcements from Italy had arrived, and at the beginning of February his force totalled 20,000 men. More than this number he could not keep supplied by reason of the inadequate preparations that had been made for the campaign. From the first to the fourteenth he manoeuvred to guard his communications, now harassed by Menelik's light troops, and from then till the end of the month, the two armies remained facing each other. Menelik at Adowa and the Italians on the heights of Sauria. Both commanders were unwilling to risk an attack, and hoped that the other would be induced to take the offensive, and both were confronted with much the same difficulties.

16. Menelik at Adowa had now about 80,000 men, and he was already again experiencing the greatest difficulty in feeding this large force. The supplies of the district were nearly exhaus-

ted, he could not move north leaving Baratieri at Adigrat and he had in fact to choose between a battle and retiring, in which latter case his army would soon melt away. He was by no means sure of the loyalty of many of his principal chiefs who were not above negotiating secretly with the enemy. His followers also were anxious for battle, and if this was refused, would probably desert to their homes as is the invariable weakness of irregular armies. On the other hand, he had learnt from his losses at Macalle the strength of modern troops and armaments in fortified positions and was very unwilling to commit himself to an attack on the whole Italian army under similar conditions. His one hope therefore lay in inducing Baratieri to take the offensive. He had accurate intelligence from spies of the state of the Italian army, and it is said that he even utilised these to exaggerate his own weakness. It is known that he spent much time in the church at Adowa praying to the saints for an Italian advance.

17. Baratieri had by this time 20,000 men and 59 guns, even had he been able to assemble a stronger force, he could not have kept it supplied. He was now better able to estimate Menelik's strength and he probably recognised also that his army was not yet in a fit state to take the field. As regards this, a great deal of criticism was directed after Adowa on the state of the Italian army and it was even freely stated that its defeat was inevitable from the first. This is doubtful, for just as a victory is prone to result in exaggeration of the merits of the victors, so defeat exaggerates defects. The fact was Baratieri's was a raw army, which had not had time to get pulled together. The Italian regiments composed as already described of volunteers from different corps, lacked to some extent the discipline and cohesion of well trained regiments, but their morale was all right, and they were eager to fight. Impatience and grumbling over short rations and the digging of fortifications was common as is often the case in all armies, but that they could fight well if given a fair chance was clearly shown by General Dabormida's brigade at Adowa. More important than this was the lack of a staff trained to work together, and the want of confidence in their general on the part of the brigade commanders, who, one and all, persisted in greatly underestimating the Abyssinian strength

and attributed to a want of energy and boldness, the very natural caution of the Governor, who more rightly gauged the dangers of his position.

18. Baratieri himself was most unwilling to take the offensive, for he was not unaware of Menelik's difficulties and hoped that the latter would either attack him or retire. Unfortunately he also found it impossible to remain where he was much longer. Already his troops were on short rations and on the 22nd of February he could hold out for only ten days longer. The reason for this was the length of his line of communication, constantly harried by rebellious tribesmen, and the breakdown of the transport resulting from inadequate preparations.

19. Since therefore Menelik still refused to attack, Baratieri had to choose between taking the offensive or else retiring to a new position nearer to his base of supplies. That he would have chosen the latter alternative is certain, but for the opposition of the army generally and the pressure brought to bear on him by the Italian ministry. This latter was the result of popular feeling in Italy, which demanded a speedy victory in revenge for the disaster of Amba Alagi, and was impatient at the slow progress of the campaign. As a result the Cabinet, which was responsible for the war, becoming alarmed for its own existence, did not hesitate to practically dictate a course of action to the general commanding, with but little regard to the military position.

20. This may be best illustrated by quoting from the dispatch sent by the Prime Minister Signor Crispi to General Baratieri at this juncture, which ran as follows. "This is a military phthisis not a war, small skirmishes in which we are always facing the enemy with inferior numbers.....it is clear to me that there is no fundamental plan in this campaign and I should like one to be formulated. We are ready for any sacrifice in order to save the honour of the army and the prestige of the monarchy."

21. Baratieri must have seen from this that he was expected to fight a battle and that any retrograde movement would be condemned and probably cause his supersession. Yet he was very loath to advance, on the 28th he even prepared a plan of retirement, but abandoned it in face of the protests of his brigadiers, all four of whom were unanimous for attack. Finally on the 29th,

the advance was decided on that ended at Adowa. How far his decision was caused by the pressure aforesaid, or to what extent he was misled by untrustworthy spies as to Menelik's weakness cannot be known, it is certain that had he only been able to remain in his strong position for a short time longer, Menelik's provisions would have been exhausted and he would probably have been compelled to retire, in which case the campaign must have ended differently.

22. Having resolved on his plan, Baratieri prepared to carry it out with considerable skill. He recognised to the full the difficulty of actually attacking the Abyssinians with so small a force in a country cut up by steep ravines and belts of thick jungle, where it would be almost impossible to preserve the cohesion, which could alone counterbalance the great numerical superiority of the enemy. His design therefore was to advance by night and occupy a strong position, near enough to the Abyssinians to provoke an attack, yet where the superior discipline and armament of his army would have full play. He judged rightly that Menelik could hardly refrain from accepting such a challenge without losing his power over his undisciplined warriors.

23. In theory this plan was a good one and whether the result would have been different, had Baratieri been able to carry it out in its entirety and array his whole force in good order on the position chosen is at least open to surmise. The great danger lay in the night march over a most difficult country without preliminary reconnaissance or any reliable maps, and it was this which eventually frustrated the entire scheme.

#### **Battle of Adowa.**

24. From the map, it will be seen that between the Italian camp at Sauria and Menelik's camp at Adowa lie two distinct chains of hills. One actually overlooks Adowa, and consists of the line, Mt. Nasrani-Gososo-Enda Kidane, the other nearer to the Italian camp, from which it is only nine miles distant, forms the line Mt. Semiata-Mt. Belah Mt. Enshasho. It was Baratieri's intention to occupy this latter line and there offer battle to the Abyssinians.

25. The position so chosen was a strong one, for even if Mt. Semiata could not be held, the group of hills between Mts. Enshasho and Rago form a natural buttress, strong on both flanks and very suitable for Baratieri's small force. It must be remembered however that the tropical vegetation of the country greatly limited the field of fire and so detracts from the apparent strength of the position as it appears on the map.

26. On the 29th February Baratieri issued his orders for the night march; they were roughly as follows. The army was to move in four brigades, the right column under General Dabormida via Zahala and Guldami Hill to the hill of Rabbi Arienni. The centre column under General Arimondi via Addi Dikki and Gunapta to Rabbi Arienni. Reserve column under General Ellena to follow the centre column to Rabbi Arienni at one hour's interval. The left column under General Albertone was to march via Adi Cheiras to Kidane Meret to guard the left flank; this column was composed of four native battalions and three batteries. Rabbi Arienni was thus the position of assembly of the right, centre and reserve columns; from there Baratieri intended to occupy the spur of Belah with his right, namely General Dabormida's brigade, Mt. Belah with the centre, Arimondi's brigade, while the ridge running up to Semiata and called by him Kidane Meret was to be held by Albertone's native brigade, the reserve column under General Ellena remaining at Rabbi Arienni. Such was the intention but unfortunately owing to the lack of reconnaissance and reliable maps, a fatal mistake had crept in to the orders. The true hill of Kidane Meret as known to the native guides accompanying the column, was not the ridge so called by Baratieri but quite a separate hill fully four miles further on toward Adowa as shown on the map.

27. The columns started at 9 p. m. and the first mishap that occurred was that near Gundapta, Albertone's column having swerved to the right got on to the same path as the centre column under Arimondi. The latter General had therefore to halt his troops whilst Albertone's battalions filed past. As a result, the left column got well ahead and about 3-15 a.m. arrived at its true destination, the ridge named by Baratieri Kidane

Meret. Here Albertone halted, but finding no sign of Arimondi's column on his right, began to get uneasy. He consulted his guides who affirmed that Kidane Meret was not his present position, but was some four miles further on. After waiting for an hour, he marched on, it is said with much anxiety and reluctance, in strict obedience to the letter of his orders. He thus arrived at the hill of Enda Kidane Meret as shown on the map at 6 a. m. wholly unsupported.

28. The remaining columns all reached Rabbi Arienni by 5-30 a. m. At dawn a fog covered the ground and Baratieri was quite ignorant that Albertone's brigade was so far in advance.

On the contrary he imagined it to be still within easy distance and at 6-45 he ordered General Dabormida to advance his brigade, to occupy the spur of Belah and if possible support Albertone. Such at least is Baratieri's version of his order but what General Dabomida understood appears to have been different. On reaching the spur, he naturally found it impossible from there to support Albertone now engaged with the enemy four miles off, so deeming it to be his duty to assist him he at once moved forward, and his column losing direction in the difficult and unreconnoitred country, inclined to the right instead of to the left and moved northward down the valley of Miriam. It thus became isolated both from the main body and from Albertone's column from which it was separated by Mts. Nasrani and Gososo already held by the advancing Abyssinians. By 8 a. m. therefore Baratieri had already lost two whole brigades, fully half his force, without even being aware of it. Only at 9 a. m. when the fog lifted was he able to perceive the dangerous position of the left column now heavily attacked by the enemy, whilst he still believed Dabomida to be holding the spur of Belah.

29. Baratieri now hastened south to Mt. Rago only to meet the first fugitives of Albertone's brigade. This latter had been attacked by the Abyssinians at 7-30 a. m. and despite a brave resistance was soon surrounded by masses of the enemy, whilst it strove desperately, like Toselli's force at Amba Alagi, to hold on to its position till reinforcements should arrive. Baratieri's message directing him to retire failed to reach Albertone and only at

10-30 did he order a retreat, which pressed by the enemy on all sides, soon became a rout.

30. Meanwhile since 9 a. m. Baratieri had been endeavouring in vain to reassemble his forces, his repeated orders to General Dabormida naturally failed to reach that officer, who was now engaged with the enemy some miles off in the valley of Miriam. Worse still, by the mistake of a messenger he was led to believe that the spur of Belah was still occupied whereas it was entirely undefended.

Under this misapprehension he formed up Arimondi's brigade on the slopes between Mt. Belah and Mt. Rago facing south with its right flank exposed. As a result at about 10-30 the spur of Belah was seized by the enemy, thus severing all hope of connection with Dabormida's column and at the same time Arimondo on Mt. Belah was heavily attacked in front and flank. It was in vain that a regiment from the reserve at Rabbi Arienni tried to recapture the spur, the enemy were already too strong. On the left also the victorious pursuers of Albertone's routed column swept round the Italian left flank and completely routing a native regiment brought up from the reserve, threatened the line of retreat to Gundapta. Arimondi on Mt. Belah was thus outflanked on both sides, whilst the reserve was already nearly exhausted.

31. At this point Baratieri ordered a general retirement. He hoped to cover it with Dabormida's brigade, but this as already explained was not available, there remained in fact only one battalion and two companies of the reserve. With these Baratieri endeavoured to stem the attack but failed. The retreat soon became a rout, and on the narrow paths crowded with fugitives, all order was speedily lost. The slaughter was great, but fortunately the Abyssinians only kept up the pursuit for about 6 to 9 miles, and what remained of the left, centre, and reserve columns reached the Italian fort of Adi Caji on the morning of the 3rd March, completely broken and disorganised.

32. Meanwhile the one remaining column, that of General Dabormida, had been making a gallant fight on its own in the valley of Miriam. For a time even it appeared successful, but naturally as the day wore on, the column became surrounded

till towards 4 p.m. it was fighting on three separate fronts, At 4-30 the retirement began, and thanks partly to a thunderstorm but chiefly owing to the firm courage displayed by all ranks, it succeeded in retreating in good order from the field though with enormous losses including the General and all its guns.

33. Thus ended the battle of Adowa and with it for the time being Italian ambitions in Africa. The Italian casualties in killed, wounded, and prisoners can be roughly calculated at from 11,000 to 12,000 men, the killed alone amounting to 6,133 whilst as a fighting force the army ceased to exist. The Abyssinian losses are estimated at 7,000 killed and 10,000 wounded. Seeing that the total strength of the Italian army that fought at Adowa was under 18,000 the extent of the disaster can be imagined. The Italian Cabinet resigned, and the new ministry shortly afterwards concluded a peace with Menelik on the basis of the complete independence of his kingdom.

34. It remains only to consider what were the precise causes of the final disaster. The defects of the army have been already described, as also the causes that induced Baratieri to take the offensive. To assume however that from that moment his defeat was inevitable is premature. More desperate enterprises have succeeded before now, despite an even greater disproportion in numbers, and Baratieri's plan, could it only have been carried out as intended, was by no means without its merits. Moreover it is only fair to state that whilst no attempt has been made here to enter into the details of the actual fighting, the general consensus of opinion amongst those officers that survived, is that the troops fought bravely enough, but were not given a fair chance of victory owing to the mistakes of their leaders.

35. The primary cause of the disaster was undoubtedly the action of General Albertone in advancing to the true hill of Enda Kidane Meret in advance of the general line indicated by Baratieri in his orders. If as stated by the latter, Albertone had sufficient grounds to suspect the error, but preferred acting on the strict letter of his orders to relying on his own judgment, then he certainly stands condemned according to our own regulations



in such cases; yet the confusion and uncertainty of a night march in such a difficult country must be remembered.

36. Following on this came the advance of Dabormida's brigade to support him, and the total loss of direction that followed. What precisely was the order given to Dabormida cannot be known, it is only certain that the result was disastrous. Once these two brigades had become isolated, defeat was practically inevitable, but Baratieri's mistaken assumption that the spur of Belah was still occupied when it was in reality undefended, precipitated the end.

37. The whole points to a want of confidence and co-operation between the General and his brigade commanders and the lack of a well trained Staff.

Such at least seems a reasonable conclusion to come to, and the Italian disaster may be held to exemplify unmistakably the wisdom of recent reforms in military organisation in India, which aim at putting in the field in war, divisions and brigades under the generals and staff that have trained them in peace.

#### Note.

The strength of the Italian army that fought at Adowa was as under.

<i>Left Column.</i> Native Brigade. Major-General Albertone,			
Four native battalions about 900 strong each ...	3700		
Two companies of native irregulars ...	376		
One battery and one section of native mountain			
artillery ...	6	guns	
Two batteries of Italian mountain artillery ...	8	guns	
Total about 4000 rifles and...	14	guns	
<i>Central Column.</i> 1st Infantry brigade. Major-Gen. Arimondi			
One regiment of Bersaglieri of two battalions			
	about...	773	
One Italian infantry regiment of three battalions...	1500		
One company of the 5th native battalion ...	220		
Two Italian mountain batteries ...	12	guns	
Total about 2500 rifles and...	12	guns	
One Bersaglieri battalion had only 350 men present			

*Right Column.* 3rd Infantry Brigade. Major General Dabormida.

Two Italian Infantry regiments of three battalions

each ... 2640

One battalion of native mobile militia ... 950

One company of native irregulars ... 210

Three Italian mountain batteries ... 18 guns

Total about 3800 rifles and ... 18 guns

*Reserve Column.* 3rd Infantry brigade. Major-Genl, Ellena.

Two Italian Infantry regiments of three battalions

about ... 2930.

One native battalion ... .. 1150.

A half company of engineers ... .. 70

Two quick firing batteries Italian ... .. 12 guns.

Total about 4150 rifles and ... 12 guns.

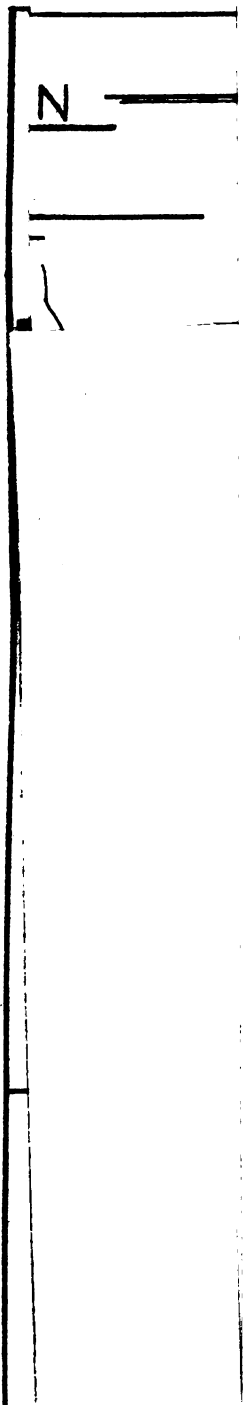
A grand total of about 15000 rifles and 56 guns. The best estimate of the Abyssinian force puts it at about 80,000 rifles, 8600 horses, and 42 guns besides some 20,000 spearmen as well.



R. F. Gi









## ***"The Panama Canal,"***

BY CAPTAIN A. M. MOENS, 52ND SIKHS F. F.

As is generally known, the idea of a Trans-Isthmian canal is no new one. Even as early as 1520 King Charles V of Spain caused a survey to be made with the idea of cutting through the neck joining North and South America.

The idea was taken up again several times during the XVI, XVII and XVIII centuries, but it was not till the middle of the XIX century that any real efforts were made to commence a canal.

At this time the United States Government was much occupied with projects of Trans-Isthmian communications between the East and West of their territory.

The Nicaragua route was thought to be the best possible, but the only practicable terminal on the Atlantic side lay within territory over which Great Britain had long exercised control.

A treaty which afterwards become celebrated, known as the Clayton-Bulwer Treaty, was therefore concluded between Great Britain and the United States. By this treaty it was agreed that neither Great Britain nor the United States should ever obtain or maintain exclusive control of any Canal connecting the Atlantic and Pacific Oceans, not should they erect fortifications commanding the same.

This treaty certainly infringed the Monroe Doctrine which is supposed to be the rule guiding American foreign policy. It was clearly an arrangement with an European Power, primarily for the settlement of questions in the Western Hemisphere which affected American interests only.

There appears however to have been a period of suspended action in regard to the Monroe Doctrine between 1850 and the settlement of the American Civil War, probably owing to internal troubles. This treaty remained in force till 1901 when it was superseded by the Hay-Pauncefote treaty.



Meanwhile in 1855 the Panama railway was completed in spite of the difficulties of bad climate and construction; this railway formed the first Trans-Isthmian communication. Its construction was undertaken quite independently of any canal scheme, but still it exercised considerable effect on all of them, as the facilities afforded by the railway must be considered as one of the factors in favour of the route now being followed.

The first route to find favour in the eyes of the Americans was that via the Nicaragua Lake. The advantages put forward for it were, that the American fleet could be stationed in a central position on the lake, ready to operate in the Atlantic or Pacific, and that the water being fresh, the bottoms of the ships would not foul. Also that the lake being at the very highest point of the canal, would supply all the necessary water, locks of course being necessary. Again it was said that no more digging was required than for the Panama route, as the lake and the San Juan River would have furnished a large portion of the canal.

This route was the subject of a Commission appointed by the United States Government in 1866, and it was finally reported on favourably in 1876.

In 1875 Ferdinand Lesseps, the builder of the Suez Canal decided to form a Company for the carrying out of the Trans-Isthmian scheme.

This Company was actually formed in 1881, the money being all subscribed in France. Lesseps decided to use the Panama route on account of the facilities afforded by the railway. The failure of this Company was chiefly due to bribery and corruption, only one third of the money subscribed having been actually spent on the canal. The failure is said to have killed Lesseps, and with his death the scheme fell through, although a new French Company endeavoured to revive it in 1894.

The advantages the Americans hope to gain by the building of the canal are both commercial and strategical. Strategy however actually brought the matter to a crisis.

At the commencement of the war with Spain in 1898 the battleship Oregon was on the Pacific and had to steam round South America, a distance of 13,000 miles to effect a junction with the remainder of the fleet which was in the Atlantic. The Ore-

gon was one of the few battleships that the Americans possessed at the time and until her arrival at Key West the whole nation was in a state of nervous excitement. This experience, coupled with the fact that America had obtained a foothold in the Pacific by the acquisition of the Sandwich Islands appears to have been the deciding factor in determining that a Trans-Isthmian canal was a necessity to the United States.

Accordingly a Commission was appointed to enquire into the best route, this time to be under the management, control, and ownership of the United States.

The report of this Commission was presented to Congress about two years later. The advantages of both the Panama and Nicaragua routes were discussed at length, the general tendency being in favour of the Panama route.

The Nicaragua route was recommended however, unless the high price asked by the French Company for their works and property was modified.

The Commission recommended that if the works and property of the French Company could be obtained for 40 million dollars, they should be bought and the Panama route adopted. This 40 million dollars was to include the price of the railway.

This was done in 1902, and all ideas of a Nicaragua canal were given up, provided that the necessary right of control could be obtained from the Republic of Colombia.

The Clayton-Bulwer treaty still stood in the way of the United States obtaining full control, management and ownership of the proposed canal. After much discussion Great Britain consented to tear up this treaty, and to substitute the Hay-Paunceforte treaty, by which Great Britain renounced some of her rights.

There remained only Colombia to be dealt with. Negotiations were entered into in 1903 but nothing definite could be settled.

Shortly afterwards the province of Panama renounced its allegiance to Colombia. The United States immediately recognised the independence of the new Republic and even guaranteed it.

## ***The Panama Canal.***

A treaty was quickly entered into by which the United States obtained complete ownership and control of the canal zone for the sum of ten million dollars, and an annual payment of 250,600 dollars, to commence in the year 1912.

By this treaty, which is called the Panama Convention or Hay-Bunau-Varilla Treaty, the United States are given the right to establish fortifications, among other concessions.

Before going into details about the canal, a few remarks about the country it will pass through and about the course to be followed are necessary.

Between Panama on the Pacific side and Colon on the Atlantic side the Isthmus is 36 miles across as the crow flies. The country generally is a mass of hills, divided by the valley of the river Chagres which flows from Alhajuela in a Southerly direction as far as Bas Obispo, where its course is altered. It now takes a North Westerly direction and flows into the Atlantic near Limon Bay. The distance from Limon Bay to Bas Obispo following the course of the River Chagres is 26 miles. From Bas Obispo to the Rio-Grande is another 9 miles, and it is this section which has been causing the most difficulty. From the point where the line strikes the Rio Grande to the sea is another 6 miles. Thus the total length of the canal is 41 miles. But in addition to this  $4\frac{1}{2}$  miles must be dredged at either end beneath the sea before deep water is reached. So the total length of waterway will be 50 miles.

As regards the class of canal to be constructed, the board of Engineers appointed to advise on this point appear to have differed considerably in their opinion.

The majority reported that a sea level canal would be the most suitable. The opinion of the minority was taken however and it was decided to construct a high level canal.

There appear to have been three chief objections to the sea level scheme. Firstly the enormous cost to cut through the Culebra Cut rendered the scheme prohibitive.

Secondly it would take a very long time to construct the canal, and thirdly the development of a current due to the difference in the tide level on the Atlantic and Pacific sides would render navigation difficult.

For these reasons the high level scheme was adopted.

This scheme requires several locks and the creation of a lake known as the Gatun lake, caused by the damming of the River Chagres.

The maximum depth of the canal itself not counting the sea entrances is to be 500 feet. This is from Juan Grande to Bas Obispo. The minimum depth is to be 41 feet. The greatest draught of any warship now built is  $29\frac{1}{2}$  feet, so there is a certain amount of spare for future developments.

It may be interesting to compare these figures with those of the Kiel and Suez canals.

The Kiel canal has a minimum depth of 31 feet, but it is being deepened.

The Suez canal has a minimum depth of 31 feet, but it is now being deepened and it is hoped that by 1915 a depth of 36 feet will be reached.

The minimum bottom width of the Panama canal is to be 200 feet while that of the Suez canal is 108 feet and the Kiel canal is only 70 feet. It will be seen therefore that the Panama canal is to be a considerable advance on any canal now existing.

Each lock in the Panama canal is to be 1000 feet long and 110 feet wide. The maximum beam of any warship now built is  $93\frac{1}{4}$  feet so that there is sufficient spare for future developments.

At Gatun a vessel has to pass through three successive locks. There are two lots of these so that two vessels can be put through in either direction at the same time.

The passage of the three locks is to take 50 minutes. It is calculated that the passage of the canal will take 10 hours and on this basis it is hoped to put through 40 ships in the 24 hours. The average speed is about the same as that maintained in the Suez canal.

The plan of the canal is briefly as follows :—

A channel 500 feet wide protected by a breakwater will lead from Limon Bay to Gatun.

At Gatun there is a great earthen dam, 7,700 feet long and 2,060 feet wide. This dam is to catch the waters of the River

## ***The Panama Canal.***

Chagres and to form the Gatun lake which will be 85 feet above sea level.

The next point to note after Gatun is the Culebra Cut, it is here that the great excavation is being made.

There is another lock at Pedro Miguel and two more at Miraflores a short way further on. These locks are of the same kind as those in use at Gatun. At Miraflores sea level is reached and no further difficulties are encountered.

With regard to the cost, the original estimate was 27 millions; this estimate was made in 1904. By 1909 this had risen to 78 millions and it is very likely that even this estimate will be exceeded.

Obviously the United States will be the chief gainers by the opening of the Panama canal. New York and the Eastern manufacturing states of America will be brought nearer to many markets which are now so far off as to render competition impossible. For instance Yokohama will be 1500 miles nearer to New York than to Liverpool and the canal will give 1000 miles advantage to New York in relation to Melbourne. The canal will favour Eastern American trade greatly. Auckland will be 2500 to 3000 miles nearer these states than any British port. This will naturally make American competition much keener than it is at present. It is true that New Zealand is brought 1300 miles nearer Great Britain by the Panama route, but very few vessels carry cargoes between British ports and New Zealand only. Most of them depend on shipments to and from Australia as well, and it is doubtful whether the saving of the 6 or 7 days voyage each way would compensate for the loss of the Australian trade. As far as Great Britain is concerned the Suez canal route will still be the shorter to India, China and Japan.

At present about 11 percent of Australia's American imports reach her direct from the United States and in addition to this, about 1 million pounds worth reach Australia through other countries, chiefly Great Britain. As the saving caused by the canal will be so great it is unlikely that this will continue to be shipped through Liverpool; it will probably go direct.

The British shipowners will therefore lose this freight. We shall score heavily in one respect however. The canal will provide an outlet for the produce of North Canada.

The freights on the Trans Continental railways are very low still it is practically impossible for land transport to compete with water transport for any long distance, and also it must be remembered that the time between the harvest and the closing of the St. Lawrence is too short to allow of its exit. The railways can certainly cope with the present traffic, but North West Canada is a rising country and undoubtedly the timber, fruit, fish, and grain trades will increase during the next few years, Not only will North West Canada benefit but California will also and in like manner the export trade from Great Britain will gain.

The South and Central American States are likely to be very considerably benefitted. At present the West coast trade of South America amounts to 60 million sterling. When there is direct communication with Europe through the canal it is certain that this trade will increase.

It is therefore probable that American trade will be stimulated by the opening of the Panama canal, as in addition to her trade with other countries East and West America will be able to use sea transport instead of rail for internal trade. The consequence of this will be to stimulate ship-building in the United States and in time they will build a large fleet of merchantmen and will become more and more a maritime nation.

As the United States gain from the point of view of commerce from the opening of the Panama canal, so do they gain from the point of view of strategy.

The possession of Key West, Guantanamo in Cuba which they are now making into a naval base, of Samana Bay in San Domingo and of Puerto Rico enable them to dominate the Gulf of Mexico, the Windward, and Mona passages. Jamaica is the weak point in their scheme. Still war between the United States and Great Britain is not likely to occur. It is certainly better for them that we should hold Jamaica than that any other power should do so.

On the Atlantic side the United States must be prepared to uphold her position in case of a European power taking too great an interest in Central and South America. This of course is quite a possible contingency.

In fact one of the results of the Agadir incident is that the United States Government represented at Berlin that if events in Morocco were to effect the present strategic position it might be necessary for the States to intervene. It was pointed out that the changes foreshadowed by the opening of the canal would make the acquisition of a Naval base on the Atlantic by Germany a matter of grave concern to the United States. If the canal had been open, the Agadir incident might have been treated by them as an event of first class importance, for they would undoubtedly have regarded it as a menace to themselves.

It is in the Pacific however where American interests chiefly lay, and where her position needs to be strengthened.

She is at present showing great activity there. Six 4 ins. guns have been ordered for Manilla and 2 for Honolulu ; 5 of these have already been delivered.

Japan is a formidable power in the Pacific and it is unlikely that Korea will afford her sufficient scope for expansion. The Philippines might easily prove an attractive bait to Japan. We have seen also how relations became strained in 1906 and 1907 over the emigrant question.

Of recent years the United States have become more and more of a colonial power. Whether by accident or design does not affect the question. Her responsibilities remain the same. In the nineties she obtained possession of the Sandwich Islands. After the Spanish War she took over the Philippines, and Puerto Rico and gained a paramount influence in Cuba.

Quite lately Mexico concluded an agreement with Japan, with the result that the Mexican Government has notified the United States that the agreement under which the latter had the use of Magdalena Bay as a naval base and coaling station is ended. The bay on account of its situation and suitability is especially adapted as the base of a big fleet as it favours the connection between Panama and San Francisco, the only large naval station of the United States in the Pacific. Now the

Americans do not intend that the Pacific shall be dominated by Japan nor do they intend that their trade there should be captured by the Japanese. Therefore taking the above into consideration it is probable that the American Navy will become a good deal larger in the next few years than it is at present. When the canal is built a short route will be provided by which the fleet can be concentrated in either the Pacific or Atlantic as occasion demands.

At the beginning of 1909 Admiral Evans of the American Navy went on a practise cruise with 16 battleships from Hampton Roads to Magdalena Bay. This cruise took 4 months. When the canal is built the distance saved will be 8000 miles and the cruise will take 3 weeks. These figures serve to show how unfavourably situated the United States Navy is at present. The building of the canal should however alter this.

But as far as we are concerned it is not so much how the canal will affect the United States but how it will affect us.

Suppose Japan was paramount in the Pacific and not the United States, she would then be in a good position to dominate Australia. The canal then will indirectly be a source of strength to us in that the effect will probably be to cause an increase in the American Navy and so tend to preserve the status quo in the Pacific.

In addition to the above indirect advantage, suppose in time of war the Suez Canal were closed, or rather suppose the route were closed to us to the Far East, the Panama canal will provide an alternative route, granting that the United States are neutral, which is most probable. We ought therefore to strengthen our position in the Carribean Sea as much as possible. Our position now is good by virtue of our possessions, the chief of which is Jamaica given us by the foresight of Oliver Cromwell.

Having seen how important the canal is to America, the steps she is taking to safeguard this vulnerable spot must be considered.

The following extract from a speech made by Ex-President Roosevelt at Omaha on September 2nd 1910. shows one American view of the question.



***The Panama Canal.***

“We have a duty to perform in connection with the Panama Canal and that is to fortify it. We are in honour bound to fortify it ourselves and only by so doing can we effectively guarantee that it shall not be used against us. The chief material advantage, certainly one of the chief material advantages which we shall gain by its construction is the way in which it will for defensive purposes double the power of the United States Navy. To refuse to fortify it and above all to consider for a moment such an act of utter weakness and folly as to invite other nations to step in and guarantee the neutrality of this purely American work would be to incur and quite rightfully the contempt of the world. It would mean the complete abandonment of the Monroe Doctrine, it would be a wicked blow to our prestige in the Pacific and moreover it would be in its essence treason to the destiny of the Republic.”

The opinion of many distinguished Americans appears to differ from this view. They say that an international treaty is the most effective means of protecting the canal. It is argued that a nation at war with the United States would not dare to seize, interrupt, or destroy it. That the Hay-Pauncefote treaty means that the canal shall be internationalised, The latter view appears to be the correct one because if the United States are unable to prevent an enemys fleet from obtaining such control of the surrounding water that it can make a sustained attack on the fortifications, then the object of fortifying the canal, namely to keep it open in order to let the American fleet in the Atlantic join the fleet in the Pacific or vice versa would be gone.

Congress have decided on fortification however; and the work is now in progress.

In conclusion the fact must be emphasised that the effect of the canal will probably be to make the United States a more powerful maritime power and will increase her trade, which at present is not as great as might be expected from such a nation, and that it is to our interest to strengthen our hold on our fine strategic possessions in the Carribean Sea. American interests in the Pacific being our own interests we should foster good feeling with them in every possible way, and should always

resent too great interference of other foreign powers in these waters.

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Since the above was written Lord Murray, acting on behalf of Messrs. Pearson & Co., has, after keen competition with European and American firms, succeeded in obtaining a 40 years concession to build railways, docks, quays, telegraphs and telephones and to search for and exploit oil deposits in the Republic of Colombia.

Lord Murray, owing to American press criticisms has, however, withdrawn from the contract to develop the oil resources of Colombia as considerable political feeling has been engendered.

No mention, however, has been made of a withdrawal of the right to build canals, railways, etc.

The possibilities as regards canal building are very great.

The Rios Atrato and the San Juan might be connected by cutting a little more than a mile in length.

The main stream of the Rios Atrato is from 40 to 70 feet deep. At present, however, the mouth of the river is obstructed by a bar which excludes vessels drawing over 5 or 6 feet. The bar is only alluvial deposit and can easily be dredged.

The San Juan which continues the main axis of the Atrato to the Pacific is nearly 200 miles long, but with its affluents has a navigable waterway of 300 miles.

The same disadvantage occurs in the case of the San Juan as of the Atrato namely the bar at the mouth near Bonaventura is at present only navigable for vessels of 6 or 7 feet. In this case dredging can also be carried out easily.

Another possible solution for a canal is to join Cupica Bay with the Atrato.

This plan has the advantages that the climate is far more healthy than in the valley of the San Juan and natural harbours exist at either end. Other schemes have also been proposed by Trautwine Porter and other engineers.

Selfridges two schemes which are those mentioned above, are however the most favoured and the cheapest.

It would seem that political reasons have precluded one of the above scheme being considered by the United States. Now that a concession to build a canal has actually been obtained, such projects as Selfridges take a new aspect. The cost of the Cupica Bay Atrato scheme has been estimated at 11 millions; a small amount compared to the Panama canal. Even supposing that this is as great an under estimate as the original Panama canal estimate, still the cost must be considerably less than that of the Panama Canal. Freights will therefore be less, and a dangerous competitor will have entered the field.

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**Extract From The Isthmian Canal Convention.**

**(Hay-Pauncefote Treaty)**

**Between the UNITED STATES and GREAT BRITAIN.**

*Signed November 18th 1901.*

**ARTICLE III.**

The United States adopts as the basis of the neutralisation of such ship canal the following rules substantially as embodied in the Convention of Constantinople, signed 28th October 1888, for free navigation of the Suez Canal: that is to say:—

(1) The canal shall be free and open to the vessels of commerce and of war of all nations observing these rules, on terms of entire equality; so that there shall be no discrimination against any such nation or its citizens or subjects in respect of the conditions or charges of traffic, or otherwise. Such conditions and charges of traffic shall be just and equitable.

(2) The canal shall never be blockaded nor shall any right of war be exercised nor act of hostility be committed within it. The United States however shall be at liberty to maintain such military police along the canal as may be necessary to protect it against lawlessness and disorder.

(3) Vessels of war of a belligerent shall not revictual nor take any stores in the canal except so far as may be strictly necessary; and the transit of such vessels through the canal shall be effected with the least possible delay in accordance with the regulations in force, and with only such intermission as may result from the necessities of the service. Prizes shall be in all

respects subject to the same rules as vessels of war of the belligerents.

(4) No belligerent shall embark or disembark troops, munitions of war or warlike materials in the canal except in case of accidental hindrance of the transit and in such case transit shall be resumed with all possible despatch.

(5) The provisions of this article shall apply to waters adjacent to the canal within 3 marine miles of either end. Vessels of war of a belligerent shall not remain in such waters longer than 24 hours at any one time except in case of distress, and in such case shall depart as soon as possible, but a vessel of war of one belligerent shall not depart within 24 hours from the departure of a vessel of war of the other belligerent.

(6) The plant, establishments, buildings and all works necessary to the construction, maintenance and operation of the canal shall be deemed to be parts thereof for the purpose of this treaty, and in time of war, as in time of peace, shall enjoy complete immunity from attack or injury by belligerents, and from acts calculated to impair their usefulness as part of the canal.

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**Extract from the Panama Canal Convention.**

(Hay-Bunau-Varilla Treaty)

Between the UNITED STATES and the State of PANAMA.

*ratified February 26th 1904.*

**ARTICLE XVIII.**

The canal, when constructed, and the entrances thereto shall be opened upon the terms provided for by Section 1 of Article III of, and in conformity with all the stipulations of, the treaty entered into by the Governments of the United States and Great Britain on November 18th 1901.

If it should become necessary at any time to employ armed forces for the safety or protection of the canal, or of the ships that make use of the same, or the railways or auxiliary works, the United States shall have the right, at all times and in its discretion, to use its land and naval forces or to establish fortifications for these purposes.



## **An Incident of the first Sikh War.**

BY MAJOR H. BIDDULPH, R. E.

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The 1st Sikh war figures prominently in the biographies of many well known soldiers, and indeed, this is to be expected when one considers the importance that attaches to the various parts played by the chief actors in it, the vital issues that trembled in the balance, and the extraordinarily heavy casualties that the Army of the Sutlej sustained in those eight short weeks of bloody conflict with the Khalsa, of which the European troops bore the brunt and acquired the chief glory at such heavy cost to themselves.

In addition to so much of historical importance, the campaign occasioned several incidents of a personal character, but of considerable interest. Among these latter the adventure that befell Captain George Biddulph is perhaps the most noteworthy, and it attracted a good deal of notice in India at the time. His story, which he published in an Indian local paper long defunct is told best in his own words, but a few introductory remarks will be useful by way of explanation.

George Biddulph, son of the Rev. John Biddulph of Birbury, was born in 1811, and was the second of three brothers to enter the Bengal Army, all of whom served in the same regiment the 45th Bengal N. Infantry. The brothers were men of great stature, and it used to be said that their total height, measured on the messroom floor was 19 feet. It is probable that if George Biddulph had been only of ordinary height he would not have fallen on the field of battle.

In 1845 Captain George Biddulph was stationed with his regiment at Umballa, and in the month of December of that year, a few days before the Sikh army crossed the Sutlej, and *ipso facto* declared war on the British, he received orders to join the 3rd Irregular Cavalry as 2nd in command.

The 3rd (Tait's) Irregular Cavalry formed part of the small force, under the command of Sir John Littler that garrisoned Ferozepore, the dangerously advanced outpost of the British Army, and it was while marching to join his new regiment that

the events happened, of which the following is his own account, dated "Army of the Sutlej near Ferozepore, January 19th 1846."

"I left Umballa on the 5th of December to join my corps. I reached within four stages of Ferozepore, when alarming reports prevailed of a Sikh invasion, and the villagers told me I must be on my guard; parties of plundering horsemen scoured the country, and I had several serious alarms, but considered that to turn round and run would only ensure instant destruction. I put a bold face upon it therefore, and continued to advance: At Moodkee, sixteen miles from Ferozepore, on my arrival, I saw we should probably be attacked, and made preparations accordingly; horsemen left the village at dusk and proceeded on different roads, as it seemed to me to bring up more during the night; three men came singly to me after dusk, saying I should be attacked, and advising me to ride for my life, but these men I treated as spies, and told them I feared nothing, and would abide with my people and baggage. During the night we kept anxious watch, and observed fifteen horsemen enter the village; at daylight the attack commenced. I was surrounded by matchlock men, spearmen, and swordsmen, and told to surrender, I said 'Never'. Twice we drove them back, but at length more and more men came on; they seized my horses, plundered the baggage, and separated many of the servants from me. I then attempted to force a passage to Ferozepore; spearmen and matchlock men held me at bay in front, others rushed on me from behind, I was knocked down and stunned with blows on the head and face, carried into a small fort and kept prisoner. Soon after the people in the fort manned the walls and prepared for a battle; this told me some of our troops must be near at hand, but ere they arrived, I was hurried out of the place, put on a horse behind a Sikh trooper, and with a strong escort galloped off some nine or ten miles. Judge my horror when I saw before me the whole Sikh camp and army! I was taken up and down their position amidst excited crowds, who abused and poked me right and left; my gallant horsemen, however, protected my life, but I saw with alarm a large beam on two posts, bearing a most unpleasant resemblance to a gallows; multitudes were around it, and I prepared for death, praying that

I might not be tortured, and die calmly. We passed this, however, and at last reached Rajah Lall Singh's tent; Akalies going in and out, shook their swords at me, and crowds thronged me; Lall Singh came out and I addressed him, but he would not hear me, ordering me to be put in irons and made over to the commandant of artillery; thither I was taken. The general spoke angrily and sent me away to his men; I was then chained under a gun, and a guard placed over me. Thus I lay for three days and nights; bitter cold it was; chapatees my food, water my drink; and many anxious thoughts prolonged my days into weeks, my nights into months. Daily I was thronged, abused, and threatened; hundreds of questions put to me; and attempting offers of service made, all of which I steadily refused. The artillery-men became my fast friends, defended my life, and as far as possible drove back the crowds, and tried to shame those who threatened me. Even in such a precarious situation, life has its pleasures and enjoyment; the calm of night, cessation from teasing multitudes, a chat with the artillery-men, smoking through my hands from a chillum without a pipe; the thousands of reports, strange sights and scenes, the pity of some, the wonder of *all*!—was not this happiness? Indeed, I began almost to be happy; at any rate I could laugh. But the scene was now to change.

"The battle of Moodkee 18th December 1845 roused my hopes; I sat on a board behind a gun, and the artillery-men with lighted matches stood around. It seemed the fight drew near and more near, fancy almost rang the clangour of a charge in my anxious senses, and then the thought whether victory to us would not be death to me came to calm my too buoyant hopes. I remembered Loveday,\* he was my ship companion!! At eleven at night the gun ceased, the file-firing died away, and I heard the bustle of the Sikh troops retiring into camp; who shall describe then the prisoner's feelings? I cannot.

"Morning at last came, and I soon perceived that the boastful pride of our enemy had greatly abated, their tone was altered

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\* Lieutenant Loveday. Political Agent at Khelat, was taken prisoner by the Baluchies during the course of the 1st Afghan War and after suffering barbarous treatment at their hands was cruelly murdered near Dadur on 29th October 1840.



and my condition seemed better. Another day, another night, succeeded; the third I was suddenly summoned to the Chief Beharie Ally Khan, and on my way to him, a smith appeared, and my irons were taken off. On entering the chief's tent, he spoke kindly gave me water to wash, and said he would get me released. Some conversation ensued, and an Afghan Sirdar, who had visited me the day before, evidently interested himself in my behalf; we started for Lall Singh's quarters, but on the way there I was sent back to my gun,

Some anxious hours passed, and when the unruly multitude heard I was likely to be released, a row commenced; my friends of the artillery stood to their guns, and declared they would fire if I were touched; by degrees matters smoothed down, and the crowd dispersed. Suddenly, I was told I might go! I desired the messenger to make my grateful acknowledgements to the chiefs, and took leave of my Bhai, the artillerymen, but I said, 'I shall be cut down directly I leave your lines.' Two of them offered to accompany me, and though their authority was not much to protect me, the risk must be run; off we set, and the sun never seemed to me to shine so cheerfully before. Then a brother of the artillery chief's ran after us, and said he would get me through their outposts; he sent the two artillery-men back, and on we went. Many were the stoppages and much demur at the last outpost, five miles from their camp, but my friend satisfied them all. Merrily we trudged the ten miles to Moodkee, and the reception I met from all was grateful indeed, and never to be forgotten. My companion received from the Governor-general 1000 rupees, and offers of service if he chose to stay with us; but he returned, however, after the battles, to his own people or home. The 21st and 22nd saw the Sikhs

Battle of Feroze Shah  
where the British casualties  
numbered 2,800.

routed after a desperate resistance, but the Governor-general would not allow me to mingle in the fray, as he said I owed *that* at least to the enemy who released me, although I refused to give any pledge not to fight."

Captain Biddulph's entry into the British Camp at Moodkee is noted in the diary of Sir H. Hardinge's Chaplain, the Rev. J. Coley, where he writes: "Captain Biddulph has returned.....

he has also given us some idea of the number of their guns and the order in which they are disposed. He is clothed in a long red garment, which the Sikhs put on him for decency's sake when they dismissed him, his own dress having been taken away."

The two men chiefly instrumental in saving his life were General Makhe Khan, commandant of the Sikh artillery, and his relative Colonel Bundeh Khan; and it is probably due to the fact that the artillerymen were Mahommedans and not Sikhs that their prisoner was not murdered.

Makhe Khan fell at Sobraon on the 10th February 1846, fighting his guns to the last, but it is pleasing to record that his humane protection of George Biddulph was not forgotten by the Government of India, who granted to his infant son a pension of Rs. 180 per annum in recognition of his father's good behaviour and later on gave him employment in their service. This son, Hussain Baksh, is still alive, now nearly 70 years of age, and he recently paid a complimentary visit to a member of the family serving in India.

The after career of Captain Biddulph can be told in a few words. He served with the 3rd Irregular Cavalry throughout the 2nd Sikh war, and was engaged at Sadoolapore, Chilianwala, and the "crowning victory" of Goojerat.

As a Lieutenant-Colonel he was on furlough in England when the Mutiny broke out, and hastening back to India he was appointed Deputy Quartermaster-General of the force that marched to the relief of Lucknow under Sir Colin Campbell. During the fighting that occurred on the 18th November 1857, (the day after the relief of the Residency, on which the dangerous task of evacuation commenced), he was sent to obtain information from Russell's brigade, which was engaged hotly with the enemy. While so doing Russell was wounded severely, and Biddulph, as the next senior officer present, had to assume the command, but scarcely an hour later he too fell, killed by a bullet in the brain. The bullet had passed through the helmet of an officer standing by him, leaving the latter unharmed. Thus the life that once had been saved by the cannon of an enemy, was taken by the bullet of a rebel sepoy.



## ***The Problem of the Gurkha Settled in India.***

BY MAJOR B. U. NICOLAY, 1-4th GURKHA RIFLES.

There is a well defined feeling at the present time that when a Gurkha soldier has finished his service with his corps he should return to his own country, there to settle down and bring up his family. A great many recruits are taken out of Nepal every year to meet the requirements of our Gurkha Battalions and Military Police Battalions, and it is only just to the State that puts no difficulties in the way of our recruiting that no encouragement should be given to retiring soldiers to settle in British India in preference to returning to Nepal. Such a policy would be obviously bad from the British point of view, as the population of the best recruiting ground would be gradually depleted and the supply of recruits from Nepal would in course of time become limited. The surroundings in his own country tend to make the Gurkha a better man than when settled under British rule. But there is another side to the question. The Gurkha soldier who settles in India is of one of three classes --(1) the man with brains who has taken his pension as a Gurkha Officer or N. C. O.—(2) the man born in India whose forefathers have served in some Gurkha unit, and—(3) the man with a family on a small pension (perhaps without one) who has lost all connection with his home in Nepal through death, law-suits, or other family trouble. Men with ties in Nepal have no wish to settle elsewhere than in their own country.

The reasons why the first class does not wish to return to Nepal are not difficult to appreciate. The man has had a successful career, the battalion has become his home. If he settles down near his battalion he can get education for his family his pension is paid without difficulty, he has old associates, and he has position. In Nepal he has none of these things; his status is no better than a sepoy's. It is not surprising therefore that a good many of the senior ranks on taking pension do settle in India.

The second class does not know Nepal, and does not wish to settle in a foreign country when getting on in life.

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The third class is small but still it exists, and will continue to exist as long as Gurkha Battalions have married establishments. These people are poor and cannot afford to buy land. They settle down in the first place near their old Battalion. If there is no room for them they drift along to the neighbourhood where other pensioners are settled and get merged among the people of the locality.

As far back as 1860 the desirability of having Gurkha colonies in India from which to obtain recruits in time of need was recognised, and land was given near certain of the Gurkha stations with this end in view. A mistake was made in some instances in placing these colonies too close to the regimental lines, and they were given a bad name for producing or sheltering undesirable characters. The figures that follow will however prove that these settlements for Gurkhas have not been altogether undesirable.

It is very difficult to trace the actual numbers of Gurkhas settled in India through census returns, as care is not taken by enumerating officials in out-of-the-way districts to show Gurkhas. In 1898 an effort was made to obtain the number of pensioners settled in India by writing to the various post officers where pensions were paid. I give the list below :—

Abbottabad	...	...	...	10
Ambala	...	...	...	5
Amritsar	...	...	...	2
Almora	...	...	...	543
Benares	...	...	...	8
Dehra Dun	...	...	...	278
Dharmasala	...	...	...	243
Gorakhpore	...	...	...	52
Gurdaspur	...	...	...	65
Hoshiarpur	...	...	...	1
Simla	...	...	...	54

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Total            1261

This list is by no means complete as pensioners are settled in Kashmir, Lansdowne, Darjeeling, Shillong, and Maymyo. The Gurkha population is naturally many times greater than the

number of pensioners. The numbers given for Gorakhpore are particularly interesting. These represent the people who have not gone to Nepal but who are scattered about the Gorakhpore District chiefly on the edge of the Terai; people who have lost connection with their villages and who would be infinitely better off in a Gurkha colony in the hills in India. In 1912 there were 1889 Gurkhas serving in the armed Forces of India who returned their homes as in India (including Sikkim). The numbers are as below:—

N. W. Frontier Province	...	22	(Around Abbottabad,)
Native States, Punjab	...	62	(Kashmir, Chamba, Simla Hills.)
Punjab	...	347	(Bakloh, Dharmsala.)
Cis-Sutlej Punjab	...	2	
United Provinces...	...	795	(About Dehra Dhun, Lansdowne, Almora)
Bengal	...	256	(Darjeeling).
Sikkim	...	107.	
E. Bengal and Assam	...	227	(Shillong, etc.)
Burma	...	64	(Maymyo etc.)
Total		...	1889

These figures may come as a surprise to many. They show at least that we have nearly two thousand Gurkhas serving the Empire who will not return to Nepal and that we have practically one full year's requirement of recruits enrolled in India. It should further be borne in mind that there is no encouragement given to the settled Gurkha to enlist, that those who are taken into battalions are a lucky few. Is it not worth while therefore to take a greater interest in the Gurkha settled in India, if only it be to keep him from falling into the hands of evil disposed people? The Sikh and the Punjabi are assisted by the Canal Colonies. What the Gurkha wants is colonies in the hills—especially for the Gurkha Battalions of the United Provinces, Punjab, and N. W. Frontier Province not too close to any Gurkha station. The country from the Western Nepal boundary to the Sutlej was once Gurkha country by right of conquest. If waste land could

be found in this region it is suggested that it is the direction in which one or two well organised Gurkha colonies should be placed, and where they would have every chance of meeting with success. The cordial support and sympathy of the Local Governments concerned is however vital to the success of any such scheme. The population of the varied races of Nepalese in the Darjeeling District number well over 100,000, a reserve of strength which has not apparently been appreciated, as recruiting is not allowed for the armed forces of India in this district, except for an occasional recruit whose enlistment must be sanctioned by civil authority. Neither Darjeeling nor the hills of the Punjab would appear badly placed positions for reserves of Gurkhas outside Nepal.

It is unnecessary to outline the rules and regulations by which a Gurkha colony should be governed, suffice it to say that every male member of the community who has not served in a Gurkha battalion should be called upon to undergo a period of training in a Gurkha Battalion.

The advantages hoped for and confidently expected from a scheme of this sort would be (1) a greater hold on the loyalty of the Gurkha population in India, (2) an improvement in the character and physique of the people, (3) a reserve of loyal men who could be relied upon in an emergency.

I do not think that the Maharaja of Nepal would look with disfavour on such a scheme were it clearly explained that any attempt to induce the Gurkha soldier whose home is in NEPAL to settle in India, would be discountenanced by the Government of India. The Maharaja of Nepal has shown by the support he has given to the Gurkha Asylum for orphans left in India, which is established in Simla, that he is not blind to charity—to establish a colony would be a charity to many, as well as being politically a sound step.

The following are extracts from a memorandum written by Sir Charles Reid in 1861, when there was a scheme on foot to reduce the four Gurkha regiments that then existed from 10 to 8 companies. At Delhi in 1857 Colonel Charles Reid commanded the Sirmoor Rifle Regiment. He writes as follows:— "..... The fighting Goorkha tribes are very

scarce, and are only to be found in three small districts in Nepal, viz- " Lamjoun ", " Karskee ", and " Goorkha ", and as proof of the difficulty experienced obtaining these excellent soldiers, I may mention that I was three years in completing my regiment after our losses at Delhi in 1857..... I was in hopes that I should have seen the Gurkha force increased to 1,000 per regiment, and that every inducement would have been given to this tribe to flock to our standard ; instead of which, the regiments have been reduced to 600 privates, thereby making them almost inefficient, as never more than 400 or 450 could take the field. In January 1858 and again in January 1860 I submitted a scheme for colonising the Dehra Doon with the Goorkha tribe, which met with Lord Canning's approval, as will be seen from the following extract of a letter from the Secretary to the Government of India—Military Department, dated Simla, May 7th 1860 ;—" His Excellency the Governor General considers the suggestions of Colonel Reid highly deserving of consideration. His Excellency has decided that they shall be at once complied with, and the Commissioner will be instructed to make over to him the land required, without restricting the quantity to the 1,000 acres estimated for the purpose. The suggestion in regard to the entertainment of 50 boys appears to the Governor General an admirable one, and His Excellency is further pleased to sanction the maintenance of a recruiting depot in the Doon to supply all the Gurkha Regiments in the service."

In conclusion I would fain hope that. ....the four Gurkha regiments may be gradually raised to 1,000 privates, and that they should always be kept on a war footing. as long experience has told me that these excellent soldiers are not to be had on an emergency."

In the fifty odd years that have passed since the above memorandum was written our recruiting relations with Nepal have completely changed, and we can now obtain without obstruction the 2,000 recruits we require every year to meet our peace wastage. But although the Central Nepal recruiting area has extended far beyond the districts of Lamjung,



Kaski, and Goorkha, the number of battalions drawing men from the area has increased fourfold. The memorandum was written with the remembrance of heavy losses still fresh, and it shows plainly the difficulty that was experienced in making good those losses, a difficulty that would again occur if all Gurkha Battalions were engaged in heavy fighting.

Our Battalions have not reached the "1,000 private strength" so strongly advocated by Sir Charles Reid, and so much more necessary now that our battalions are full of "specialists", whose absence from the firing line makes for numerical weakness.

By taking up the question of the retired Gurkha soldiers settled in India and his descendants and making the latter undergo a term of military training as a condition of their remaining in British India, we should keep up the characteristics of the expatriated Gurkha, obtain the men to give us the strength of "1,000 privates" per battalion without asking Nepal for another recruit above the yearly quota, and have ready to hand in India for a sudden emergency a reserve of loyal men whose interests are bound up with the British.

## **Quarterly Summary of Military News and Items of Interest.**

### **ARMY HEADQUARTERS.—General Staff Branch.**

**Manoeuvres in Eastern Bengal.**—The manoeuvres to be held in Eastern Bengal in January will cover a very wide area. The troops in concentrating will reach Dacca from nearly every direction and in dispersing will for the most part proceed by routes other than those by which they came.

The work during the concentration should be of an interesting nature. The four batteries will carry out their annual practice in the neighbourhood of Dacca, and will be available to accompany the other arms during manoeuvres.

Owing to the manner in which Eastern Bengal is intersected by waterways ordinary methods of transportation are out of the question. River steamers and flats will to a great extent take the place of the transport normally used for the carriage of equipment and supplies.

Advantage will be taken of the excellent accommodation available in Dacca to house as many as possible of the troops while they are actually there. While manoeuvring they will bivouac and special arrangements have been made for an issue of waterproof sheets as a protection against the very heavy dews to be expected in Eastern Bengal in January and February.

The experience which the troops will derive from exercises carried out in an area so unlike that to which they have been accustomed should prove of great value and the exercises themselves be very interesting. His Excellency the Commander-in-Chief has issued instructions for the grant of facilities to local Indian gentleman of position to view the operations.

The concentration will be under the personal direction of Lieutenant General Sir Robert Scallon, K.C.B., etc. whose recent experience in Burma will enable him to make the best use of the various means of river transportation. A Company of Sappers and Miners has been placed at his disposal specially in connection with this.

**Staff Exercise.**—A staff exercise was held at the Montgomery Hall, Lahore, from November 3rd to 7th under the direction of H. E. the Commander-in-Chief for the purpose of testing the principles contained in F. S. R. Part II and the Staff Manual, War as applied to Indian conditions. 102 officers attended in all, including 28 General officers.

**Japaness Military Attache.**—Captain Joshitsugu Takekawa has replaced Major Midzumachi as the Japanese Military Attache in India.

**Appointments.**—Lieutenant Colonel J. K. Tod, 7th Hariana Lancers has succeeded Colonel A. S. Cobbe, v.C., D.S.O., A.D.C. as General Staff Officer 1st Grade in the Military Operations Branch at Army Headquarters India.

Captain F. G. Marsh, 9th Gurkha Rifles has succeeded Major E. A. F. Reid 113th Infantry as military attache at Meshed.

**Exploration.**—Captains Bailey and Morshed have returned to India having explored and surveyed the unmapped portion of the course of the Tsang-po from Longitude  $92^{\circ}$  to Longitude  $92^{\circ} 15'$  and the southern Tibetan frontier from Pemakoi to Tawang.

Sir Aurel Stein arrived at Chilas on the 10th August and left for Hodar the following day. He subsequently passed safely through Darel and Tangir.

**Frontier Constabulary.**—The disbandment of the Border Military police is completed. The completion of the enlistment of the Frontier Constabulary to replace them was expected on October 1st.

**Survey.**—The Survey of India detachment under Lieutenant K. Mason R.E., which has been connecting Indian triangulation with that of Russia on the Pamirs in Chinese territory, has returned.

**Military Aeronautics in Siam.**—An aviation corps has been formed in Siam and three Siamese officers who have been studying aviation in France have brought out light machines, monoplanes and biplanes, purchased for the Army.

**Chitral Reliefs.**—The Chitral reliefs were carried out this year without incident, the relieved troops reaching Chakdara on the 17th October all well. The column crossed the Loarai Pass on the 9th and 10th October. The weather for three days

previously had been very bad and snow had fallen on the pass but not in sufficient quantity to make the crossing difficult. The Nawab of Dir accompanied the upward column as far as the Loarai Pass and returned from there with the downward column.

**Dir.**—The Nawab of Dir has been engaged in consolidating his position and executing vengeance on his recent opponents by confiscations, etc.

**Mulla Powinda.**—The Mulla Powinda died at his home on the 2nd November. His illness was short and sharp and developed very rapidly, it being surmised that the cause of his death was stone in the bladder. Nearly all the leading Mahsud maliks were at Sarwarkai with the Political Agent when the news arrived; it appeared a great shock to them, even the Mulla's most inveterate enemies professing intense sorrow. The Mulla nominated his second son Fazal Din as his successor.

**Turco-Persian Delimitation Commission.**—The British portion of the Commission for the delimitation of the Turco-Persian frontier assembled at Mohammerah in December and work is to commence early in January. The following appointments have been made to the Commission.

Commissioner, Mr. A.C. Wratislaw C.B., C.M.G., of the Consular Service.

Deputy Commissioner, Captain A. J. Wilson C.M.G. Indian Political Department.

A survey party, consisting of Lieut.-Colonel C. H. D. Ryder D.S.O., R.E., assisted by Major H. McCowie R.E. with Khan Bahadur Haji Abdul Rahim of the Provincial Service and three members of the subordinate service will accompany the Commission.

Lieutenant J. G. O. Yeats-Brown 17th Cavalry will command the escort of 30 Indian Cavalry.

An officer of the Medical Service will probably be attached to the Commission.

**Masqat.**—The Sultan of Masqat Saiyid Faisaldin-Turki, K.C.I.E., died on October 4th and was succeeded by his son Saiyid Taimur. The rebel forces in the interior still keep the field though no further developments have taken place. A position of stalemate really prevails and the Sultan is endeavouring to come to terms with the rebel leaders.

**Persian Majlis.**—At a meeting of prominent politicals and ecclesiastics held at Tehran in November the question of parliamentary elections was discussed ; nothing was decided regarding the date of convocation of the Majlis and it was said to be doubtful whether elections would be held in 1913.

**Communications in Central Asia.**—The Khivan authorities have signified their willingness for the Khanate to be connected by rail with Russian territory and a line from one of the stations of the Central Asian line into the interior of the Khanate is projected.

*Adjutant-General's Branch.*

Amended regulations for officers of the Indian Ordnance Department have been issued—Officers appointed to the Department after 1st July 1910 vacate their appointments on attaining 52 years of age. Officers appointed to the Department previous to 1st July 1910 will be given the option of doing so.

2. In future the Inspector of Cavalry will only officially inspect brigades and the Cavalry School, Saugor. The inspection of individual regiments will be carried out by Brigadiers and Divisional Commanders.

3. The Mountain Artillery in India has been permanently brigaded as follows.

No. 1 British Mountain Artillery Brigade					{	No. 1	M. B. R. G. A.
						No. 2	" "
No. 2	"	"	"	...	{	No. 3	" "
						No. 4	" "
No. 3	"	"	"	...	{	No. 5	" "
						No. 6	" "
No. 4	"	"	"	...	{	No. 7	" "
						No. 8	" "
Unbrigaded	...	...	...	...	No. 9	" "	
No. 1 Indian Mountain Artillery Brigade					{	21st Kohat	M. B. (F.F.)
						22nd Derajat	" "
No. 2	"	"	"	...	{	23rd Peshawar	" "
						24th Hazara	" "
No. 3	"	"	"	...	{	25th	" "
						26th Jacobs	" "
No. 4	"	"	"	...	{	27th	" "
						28th	" "
No. 5	"	"	"	...	{	26th	" "
						30th	" "
No. 6	"	"	"	...	{	31st	" "
						32nd	" "

As far as possible batteries of a brigade will always be located together and move in relief as an intact brigade.

*Quartermaster-General's Branch.*

At the recent Railway Conference in Simla the rules for regulating military traffic were revised. The revised pamphlet will shortly appear in India Army Orders. It will be noticed that the most important change is that relating to "Goods intended for Government" about which there has been a certain amount of difference of opinion in interpreting the rules. In future military traffic rates will only apply to goods actually the property of Government in the Army Department at the time of despatch. This should now make the position clear to all.

**4TH QUETTA DIVISION.**

The reliefs this season bring many changes within the Division. The 1st Battalion Essex Regiment after four years in Quetta have left for Mauritius and Pretoria, and have been replaced by the 2nd Battalion Somerset Light Infantry from Tientsin.

The 2nd Battalion Royal Welsh Fusiliers leave for England in February next, and the 1st Battalion Lancashire Fusiliers have replaced the 1st Battalion York and Lancaster Regiment at Karachi.

The 23rd Cavalry, F. F. have left for Lahore Cantonment, and the 28th Light Cavalry are now stationed in Quetta the first Non-Silladar Regiment to be stationed in Baluchistan.

Old habitues of the Division return in the 126th Baluchistan Infantry who are to replace the 31st Punjabis at Fort Sandeman on their return from China, and the 127th Baluch Light Infantry who again revisit their headquarters at Karachi.

The 10th Jats leave for Jhansi, and the 19th Punjabis come to Quetta from Dargai, and the 12th Pioneers from Poona replace the 121st Pioneers. The 21st Brigade, R. F. A., from England relieves the 18th Brigade in Sind, and Nos. 3 and 7 Mountain Batteries, R. G. A. exchange between Egypt and Quetta respectively.

2. The 2-7th Gurkha Rifles have sent a detachment of 4 companies to Kacha to occupy the new lines there which have been constructed by the 121st Pioneers who return to Quetta on relief.

3. All regiments in Quetta have now got their own rifle ranges.

4. The Headquarters of the Brigadier General Commanding Royal Artillery, 4th and 5th Divisions have been transferred to Mhow.

5. The snow has arrived early this year, and by the beginning of December the hills were well covered, whilst heavy rain fell in Quetta.

6. Polo has continued into December. A local American handicap tournamant was played in November, bringing the number of tournaments played in Quetta this season up to four.

7. The Quetta Hunt is enjoying very good sport. Hunting was commenced somewhat earlier in the season than usual. but owing to heavy losses in the young entry only 16 couple of hounds were available. A draft of 8½ couple of English hounds arrived from England in November, all being given by different packs at home. These new hounds are doing very well and add a welcome burst of music to the muteness that country bred hounds so often possess.

Two Hunt point-to-point meetings have taken place.

The annual team race was won by the 2-7th Gurkhas led by the present Master, Captain N. M. Wilson.

#### 5TH MHOW DIVISION.

1. Major-General R. Lloyd-Payne C.B., D.S.O., and Colonel H. T. Brooking, G.S.O. (1) both returned from leave in England in October.

2. During November the Bhils in Sunth State got out of hand. The Bombay and Rajputana Politicals requisitioned troops from the Division. A Double Company of the 104th Wellesley's Rifles from Baroda and 125th Napier's Rifles from Mhow, with machine guns from the 7th (Duke of Cambridge's Own) Rajputs, Ahmedabad, were warned, together with the Mewar Bhil Corps.

Eventually 1 Double Company, 104th Wellesley's Rifles, machine gun detachment of 7th (Duke of Cambridge's Own) Rajputs from Godha and a portion of the Mewar Bhil Corps proceeded into the Bhil country. Some 2000 Bhils were collected

on Mangad hill, with their Gurus who had promised them immunity from rifle fire; they refused to disperse and assumed a threatening attitude.

The Political officials instructed the Military to disperse them by force; when some 12 had been killed and several wounded by rifle and machine gun fire the Bhils slowly dispersed. The ring-leaders with 900 prisoners were rounded up. The latter were liberated.

This little affair though involving no serious fighting called for some stiff forced marches through difficult jungle country. One Sepoy of the 104th Wellesley's Rifles received a bullet wound in the leg.

Major G. Bailey, 104th Wellesley's Rifles, who conducted the military operations received the commendation and congratulation of His Excellency the Commander-in-Chief in India.

3. From the 23rd to 26th of November a Double Staff Tour was conducted by Lieut.-General Sir John Eccles Nixon K. C. B., Commanding Southern Army, between the 5th (Mhow) Division and the 6th (Poona) Division. The 6th (Poona) Division concentrating at Nasik and the 5th (Mhow) Division at Malegaon.

4. During November and December, Brigade Training and Manoeuvres were held in the Nasirabad and Jhansi Brigades in the neighbourhood of Neemuch and Jhansi.

The Jubbulpur Practice Camp took place in the neighbourhood of Kusner.

5. The monsoon varied greatly in different parts of the Division Mhow received good rain and the water supply at Bircha completely filled up; this had been a source of great anxiety. Neemuch and Indore also received good rain.

Jubbulpore and Jhansi were both deficient. Nasirabad was the greatest sufferer and enquiries commenced as to the desirability of moving the garrison temporarily to other stations. Fortunately during the first week in December  $4\frac{1}{2}$  inches fell, which saved the situation.

6. The 1st Battalion Northumberland Fusiliers left Mhow for England in October and the 2nd Battalion Hampshire Regiment arrived from Mauritius in December. The 2nd Battalion Royal Fusiliers left Jubbulpore for Calcutta in November and the



1st Battalion York and Lancaster Regiment arrived from Karachi in December. The 1st Battalion Royal Irish Rifles left Kamptee for Aden in December and the 2nd Battalion East Yorkshire Regiment arrived from Fyzabad in December.

### BURMA DIVISION.

#### RIFLE MEETINGS.

The Dyer Challenge Cup: A Silver Cup valued Rs. 500 presented by Messrs. Dyer and Company and Rs. 80 to be divided among the winning team.

The competition, open to British and Volunteer Corps in Burma, was fired for by the teams representing units stationed in Rangoon on the 29th January 1913.

The competing teams were :—Rangoon Port Defence Volunteers, points scored 636, Burma Railway Volunteer Corps 544 points, and 1st Royal Munster Fusiliers 649 points, beating the Cup holders by 13 points.

The 80th Carnatic Infantry won the Southern Army Officers Rifle Cup (Rosseter) and the Burma Division, Barnett Bros, Revolver Cup for the year 1912-1913.

Two members of the Rangoon Volunteer Rifles went to Bangalore to compete in the S. I. R. A. meeting, one of them (Sgt. B. Vertannes) finished 4th in the Grand Aggregate, he was also selected as one of the team to represent the Volunteers against the Regulars, which match was won by the former.

An inter-port shoot took place between Rangoon and Ceylon which was won by Rangoon.

#### ATHLETIC AND BOXING MEETINGS.

##### *Boxing Tournament by the Royal Munster Fusiliers.*

The first Tournament to be held took place in the Regimental Gymnasium on the 20th February and was quite a success.

On the 20th September, a grand Naval and Military Tournament was held in the Jubilee Hall. The tournament had been arranged with the idea of entertaining the crew of H. M. S. "Swiftsure" which came into port a few days previously. The tournament was a great success in every respect, and a tremendous programme was worked through during the night without a hitch.

*Paper chase runs in the Royal Munster Fusiliers.*

The rainy season in Rangoon lasts from about the middle of May to the beginning of October, and during that time it is hard to find means of exercise.

In July 1912 the battalion runs were started, chiefly with the object of getting exercise and keeping the men fit. The battalion would parade about 6-30 a. m. in any kit. Two hares would lay a course of from two to three miles in length; a few minutes later word was given to go and the whole battalion would start off. These runs were at first not a success and not very much interest was shewn, it was too much of a parade, besides there is no open country near enough to Rangoon, and running chiefly along the roads in a hot and sticky atmosphere, with no object in view, did not tend to make it a pleasurable form of exercise.

In 1913 however, the 2nd Lieutenants of the Regiment very kindly decided to give a Cup for the best running company in the battalion, and points were scored as follows :—

If a hundred men started, first man in counted a hundred points, the second man 99 and so on for his company. All coming in within a certain time of the first man, varying from 6 to 4 minutes, according to the length of the run, scored points for their company.

A very keen interest was now taken in these weekly runs, and every evening one saw men training on the race-course, or running around cantonments. The Cup was finally won by "A" company with an average of 114'93. "E" Company could not be placed as they were only present for two runs.

*Jiu Jitsu Classes.*

During the month of August Captain McLaglan, the champion Jiu Jitsu expert, arrived in Rangoon and classes were formed to go through a short course. About 80 men of the Munster Fusiliers were put through this and some took it very well. Captain McLaglan eventually gave an exhibition by pupils and it was surprising to watch the state of perfection that they arrived at in so short a time. About 18 certificates were awarded to Non-Commissioned Officers and men who had shown proficiency.

*Football.*

The season lasts from June till the end of September and owing to the keenness of Burmans on Soccer, there is a match in one competition or another every day of the week during that time. It is the time when the S. W. monsoon is on and about 80 inches of rain fall in that period, so that all the games are played on very wet and heavy grounds.

The competitions that are most important from a military point of view are the "Senior League," "Second League" and the "Walter Locke Shield." The Senior League is open to the six best clubs in Rangoon and each team plays the other twice. The teams were R. G. A. (holders of the competition from the previous year), the Royal Munster Fusiliers, Rangoon Gymkhana, Rangoon College, (All Burmans), Burma Oil Company, and the Customs.

The Royal Munster Fusiliers started by losing their first two matches, being beaten by the R. G. A. and the Rangoon College, but from thereon they never lost another match and finished up two points ahead of the R. G. A., thereby winning a large handsome cup and the members of the team getting gold medals, the runners up (R. G. A.) receiving silver medals.

The Second League was won by the R. G. A. The Munsters were expected to win this competition at first, but two defeats at the end of the season brought them into second place, earning them silver medals, and the R. G. A. winning the cup and the team receiving gold medals. The Water Locke Shield is a knockout competition open to teams all over Burma and the Border Regiment (who were the holders of the Shield) sent their eleven from Maymyo, and all the Senior League teams, two Second League teams and a team of the Burma Civil Police entered.

The competition was won by the Royal Munster Fusiliers as follows:—drew a bye in the first round, defeated the Rangoon Police Club in the second, thus reaching the semi-finals when they met St. Paul's High School and defeated them—the latter having defeated the Borders previously. The final was between the Royal Munster Fusiliers and the Burma Civil Police, and ended in a draw of one goal each, but on the replay two days after the Munsters won by two goals to one.

The Shield and Gold Medals were presented to the winners by the Commissioner of Pegu. The Royal Munster Fusiliers now hold for a year this Shield and Senior League Cup.

**HOCKEY.**—"The Lawford Challenge Cup."

This cup was played for in March and resulted in a win for the Royal Munster Fusiliers, beating the Borders (the holders) in the final by 5 goals to 2.

*Miscellaneous.*

During the month of September H. M. S. Swiftsure, Flagship E, I. Squadron—Admiral Peirse visited the station and stayed from the 17th to the 23rd. On the 22nd a dance was given at the Gymkhana Club in their honour and a very pleasant evening was the result. On the 23rd invitations were sent out to tea on the Flagship of which many availed themselves and dancing was kept up to the strains of an excellent string band. The Officers of the Flagship were entertained by the members of the Pegu Club on the 20th. There was also a Boxing tournament got up by the Royal Munster Fusiliers on the same date, and many of the officers came on to it afterwards. The Pagal Gymkhana arranged for the men, by the Royal Munster Fusiliers on the 22nd, unfortunately had to be put off on account of the weather. It was a great pity that the vessel had to remain at the Hastings on account of the tides.

The Indian officers of the station were shown over the Flagship.

*Meiktila.*

Sports of the 89th Punjabis took place on the 15th and 16th of October to celebrate the anniversary of the raising of the Regiment. The Championship of the Regiment was won by Sepoy Mangal Singh, "A" Company, a very creditable performance, as he is a young soldier of under three years service and had to compete against several redoubtable veterans. The great majority of events were won by numbers I and IV D. C. who shared the honours about equally. On the last day the officers were "At Home" to the station, thus bringing to conclusion a very successful meeting, the success of which was largely due to the efforts of the Committee consisting of Major G. A. Strahan, Captain N. M. Geoghegan, and Lieutenant W. R. James.

*All Burma Rugby Football Cup.*

This competition took place at Rangoon on the 2nd and 4th of October 1913. Three teams entered, viz, Border Regiment Royal Munster Fusiliers, and Rangoon Gymkhana. The Gymkhana drew a bye in the first round, which left the Borders and Munsters to compete on the 2nd October. The Borders ran out easy winners by 24 points to nil. The final between the Borders and Rangoon Gymkhana on the 4th October was stubbornly contested. The Gymkhana leading at the interval by 5 points to nil. In the second half the Borders showed their superiority and eventually ran out winners by 8 points to 5 points.

*Maymyo Rugby Football Cup.*

The first match of this tournament was played at Maymyo on the 14th October 1913, between the Royal Munster Fusiliers and Maymyo Gymkhana. The game was keenly contested from start to finish and resulted in a win for the Maymyo Gymkhana by 23 points to 5 points. On the 16th October the Borders and Rangoon Gymkhana met. This match was a hard fought game throughout. The forwards were kept going from start to finish. The Borders winning by 15 points to nil. The final was played on 18th October before a large crowd. The Borders forwards soon asserted their superiority in the scrums. Half time arrived with the Borders leading by 5 points to nil. Maymyo stuck to their work in the second half but could not make headway, the Borders winning by 14 points to nil.

*Anniversary of the Battle of "Arroyo-dos-Molinos."*

The anniversary of the Battle of Arroyo-Dos-Molinos fought on the 28th October 1811 was celebrated by the holding of a Torchlight Tattoo.

The Tattoo took place on the football and hockey grounds and the roofs of the Guard Detention Room and Quarter Master's Stores were turned into a Grand Stand.

The Tattoo commenced by the entrance of the Pipers of the 1-10th Gurkha Rifles, who marched past the Grand Stand and then into the centre of the ground, they were followed in turn by the Drums and Fifes of the Border Regiment, the

Band of the 1-10th Gurkha Rifles and the Band of the Border Regiment. When all the Bands were drawn up in the centre, the torch-bearers, 128 in number, advanced from the rear into the intervals of the Bands. The whole line then advanced towards the Grand Stand where they counter-marched. The torch-bearers then performed a number of evolutions and figures, first forming a star and then forming the word "Arroyo." A maze march was then carried out at the end of which the torch-bearers formed the figures XXIV (the old number of the Regiment). The last movement was intended to represent three figures from the Lancers. The massed Bands and torch-bearers then advanced to the Grand Stand where they played the Evening Hymn and "God Save The King." The Tattoo was witnessed by a very large number of people from Maymyo and neighbouring districts.

*Detachment 1st Border Regiment.*

The only item of any interest that has occurred in this detachment since 1st September 1913, has been the celebration of the 102nd anniversary of the Battle of "Arro Dos Molinos" (28th October 1911). The day was observed as a holiday and Athletic Sports were held for men of the detachment. At the same time teams representing the companies on detachment were sent up to the Headquarters at Maymyo to take part in the Regimental Assault-at-Arms and Sports likewise held to celebrate the occasion.

A Regimental Assault-at-Arms was held on the 9th, 10th and 11th of October 1913, by the 92nd Punjabis.

A Regimental Rifle Meeting was held on the 24th and 25th October 1913, open to 2nd and 3rd Class Shots only.

A Divisional Machine Gun course held at Anisakan near Maymyo from 2nd to 12th November inclusive, results of which were very satisfactory. A Fire Problem Meeting also held at Anisakan on 10th, 11th and 13th November. The problems set were practical and interesting. The Meeting was well attended and the entries for the various competitions very good, Unfortunately both the Machine Gun course and the Fire Problem Meeting were somewhat interfered with by rain.

*Mandalay.*

The Divisional Assault-at-Arms open to regular troops, volunteers, and military police was held at Mandalay from 12th to 15th November inclusive and was most successful in spite of the arrangements being upset by heavy rain on the first two days. The Programme was an excellent one and all events were keenly contested. A feature of this Assault-at-Arms was the large number of entries by the military Police. Captain C. E. Dease, 91st Punjabis, the Honorary Secretary, deserves great credit for its success, which was mainly due to the thoroughness of the arrangements made by him.

The 1-10th Gurkha Rifles won the Native Army and Police Football Cup in the tournament in Mandalay during August 1913. In the first round they defeated the Sappers and Miners by 2 goals to nil. In the second round they defeated the 92nd Punjabis by the same margin. In the final they met the Police Training School, and won after an excellent game by 3 goals to 1.

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**Royal Indian Marine.**

DECEMBER 1913

*Director.*—Captain WALTER LUMSDEN, C.V.O., A.D.C., R.N., (ret'd). Appointed 17th March 1909 Official Residence, Marine House, Bombay. (The Director of the Royal Indian Marine advises the Government of India on all Maritime affairs.)

*Deputy Director.*—Captain G. S. HEWETT, R.I.M., Appointed 27th February 1910. Official Residence, Marine House, Calcutta.

*Assistant Director.*—Captain E. J. C. HORDERN R.I.M. Appointed 10th August 1912. Official Residence, R. I. M. Dockyard Bombay.

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**R. I. M. Dockyard,  
BOMBAY.**

*Staff Officer.*—Commander E. W. HUDDLESTON, R.I.M., appointed April 13th 1911.

*Inspector of Machinery.*—Chief Engineer T. H. KNIGHT, R.I.M., appointed May 6th 1911.

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*Chief Constructor.*—T. AVERY, Esq., appointed December 12th 1908 (on 9 month's leave).

*Constructor.*—D. H. NORTH, Esq., appointed March 13th 1909.

*Assistant Constructor.*—MR. W. J. KENSHETT (*Sub. pro tem.*)

The main works at present in hand and completed during the last quarter consist of the building of a Light ship for the Persian Gulf, and a caisson for the Bombay Port Trust. Large structural alterations in the Dufferin, and annual alterations and defects carried out in H. M. S. Philomel and R. I. M. S. Dufferin, Hardinge, Dalhousie, Investigator, Lawrence, Palinurus, etc., the average number of workmen employed daily during the last quarter was 1846.

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KIDDERPORE.

*Staff Officer.*—Commander J. J. W. CALDERON, R.I.M., appointed August 18th 1810.

*Inspector of Machinery.*—Chief Engineers, J. LUSH, R.I.M., appointed October 23rd 1911.

*Constructor.*—E. P. NEWNHAM, Esq., appointed December 12th 1908.

*Assistant Constructor.*—T. G. BAILEY, Esq., appointed December 6th 1891.

The main works at present in hand are the construction of 11 small steamers and launches, of which 5 are for the Bengal Government, 4 for Assam, 1 for Madras, and 1 for Burma. The alterations and repair works which have been carried out during the last quarter or are at present in hand, are in the Pilot steamer Fraser, the steamer Crocodile and Dredger Jack II and 14 steam launches etc., etc. The average number of workmen employed daily during the last quarter was 1985.

Both dockyards were continuously employed almost to their full strength.

**Finances 1912-13.**

The expenditure for the year 1912-13 on the Royal Indian Marine was Rs. 50,53,900, but for the purpose of Finance, the Royal Indian Marine Budget includes, in addition to the maintenance of the R. I. M. Fleet and of the two large dockyards as enumerated in the preceding pages, coal supplies to the Royal Navy, repairs to H. M. S. Sphinx, special allowance to H. E. the Naval Commander-in-Chief, etc., which together with services to Local Governments amounted for the year 1912-13 to Rs. 14,34,356 a further sum of Rs. 3,83,336 was for service as noted below :—

	Rs.
(1) Steam tugs, launches etc., employed entirely on Military duties, Special defences, etc...	2,12,320
(2) Hire of transport for conveying mules corps	1,16,030
(3) Conversion of R. I. M. S. Elphinstone into a floating hulk for Calcutta Port Defence Volunteers and her up-keep ..	19497
(4) Maintenances of coal depots in the Persian Gulf for Royal Navy and Political department ... ..	19,156
(5) Maintenance of Perim Light house ..	9,466
(6) Maintenance of Indian Government Telegraph-ship Patrick Stewart ... ..	6,837
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TOTAL	... 3,83,336
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Thus out of a gross expenditure for the year of Rs. 50,53,900 the actual cost of the Royal Indian Marine service and Dockyards amounted to only 32,36,208 against which may be placed the earnings of the R. I. M. dockyards at Bombay and Calcutta and sums realised for sale and hire of R. I. M. vessels, stores, etc., which amounted to Rs. 13,18,000, leaving the total expense to Government Rs. 19,18,208, for which the following duties were performed. Three ships employed on Home, Indian and Colonial troop-ing; Stationships maintained in Burma, Andaman Island and Aden and Persian Gulf. Two ships employed on special duty in Persian

Gulf in connection with Gun running and Light House construction. Hydrographic surveys carried out in Burma and Persian Gulf. Three river steamers maintained in Burma, and Euphrates river, Dockyards maintained at Bombay and Kidderpore etc.; etc.

The annual contribution (or subsidy) of £1,00,000 which the Government of India pays annually towards the maintenance of H. M. Ships of the Royal Navy employed in Indian waters, is also for purposes of finance included in the R. I. M. Budget.



## NOTICES OF BOOKS.

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### 1. *Tanjore.*      2. *Madura.*

*Illustrated guides with History* by Major H. A. Newell, (Higginbotham & Co.) Price 8 annas each.

These are two of a series of pocket guides of which Delhi and Agra were noticed in the October Journal. Like them they give a short account of the places of interest which should be seen by the traveller, but they are chiefly confined to temples. The writer gives a brief summary of the Indian rulers of Tanjore and Madura and extracts from Hindu Mythology of local interest. Considering the interest attached to the struggles between the English and French in these places and the early history of the Indian Army, it is a pity the author has made practically no references to either. These are still buildings and places connected with that time well worth a visit and perhaps of equal if not greater interest to the English traveller than temples. Maps would have added much to the value of both books.

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***Trichinopoly*** by Major H. A. Newell (Higginbotham) price 8 annas.

This little book hardly does justice to the places of interest to be seen at Trichinopoly and one cannot help wondering if the energetic traveller who sets out to see all there is of interest in the course of a day, as he is told he can, will succeed in seeing half, considering the climate. Like the similar works on Tanjore and Madura, the extracts from Hindu Mythology are numerous and there is no map. It is disappointing to find no mention of Olive's house which still exists, and scarcely any of the struggle between the French and English for supremacy at Trichinopoly. Extracts from the pages of Orme would have been of interest to the English reader and a brief summary of the part played by Trichinopoly in the early history of the English conquest of India should certainly be included in any account of the place.

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***Benares.***—*The Hindus Holy City*; by Major H. A. Newell Indian Army. A complete guide, with map. Published by Higginbothams, Ltd. Madras. Price 8 annas.

This is the latest addition to the series of handbooks by Major Newell on the famous cities of India. It includes Sarnath and Ramnagar and all

places of importance, (except the Lat Bhairo, on the north edge of the city, once the scene of a big riot between Hindus and Muhammadans.) On pages 9 and 10, the details regarding Aurangzeb's Mosque are confused. In reality there are two such mosques (One, of which the minarets are conspicuous for miles, is on the river bank above the Panchganga Ghat. The other is on the site of the former Visweswar temple near Gyan Bapi, and includes in its western wall several carved stones from the older building.) No mention is made of the British connection with the place after the time of Warren Hastings, thus omitting reference to the murder of the British Resident in 1799, and to the incidents of the Mutiny, when disaster was only averted by the vigorous action of Colonel Neill. Attention might have been called to the fact that the early morning is the only time of day to see what is to many the most interesting sight of Benares, namely, the spectacle of thousands of people bathing in the river, with a background of innumerable palaces and shrines.

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**Lucknow.**—*A short history by Major A. T. Anderson R.F.A. published by the Pioneer Press.*

In this little book the author lays no claim to originality ; nor does he attempt to draw the lessons to be learnt from the relief and siege of Lucknow. He has quoted freely from despatches and accounts written at the time, the extracts being in all cases well chosen.

Chapter I gives a short history of Lucknow from the middle of the 15th century up to the mutiny.

The remainder of the book is devoted to the mutiny period, excellent accounts being given of the defence of the Residency, the first and second reliefs, the evacuation of the Residency, Outrams defence of the Alum Bagh and of the siege.

Some useful notes about Marisaon Cantonment from an appendix and details of some of the inscriptions on tombstones and monuments in Lucknow and its vicinity are included. A map shows Lucknow of to-day with villages, etc., which existed in 1857 but have since disappeared, as well as the routes followed by Havelock and Colin Campbell. The author is to be congratulated on having given a good account in simple language, devoid of technicality, of one of the most stirring periods of our history in India.

Among other interesting facts the reader will be glad to find the true story of Hodsons death in view of the accounts which have appeared in various treatises.

A study of this book will amply repay both soldiers and civilians.







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